WESTERN IRRIGATION AGRICULTURE

FIELD NOTES

San Antonio.

During the week ending December 9, the maximum temperature was 79; minimum temperature 22; precipitation 0.

Plowing was continued, the plowing of all fall plowed cotton plats in the rotation experiments being completed. Plowing of D4 was finished and oats seeded thereon. Plowing of field C3 was finished. Alfalfa in the root rot control experiment in the nursery was seeded. Post holes were dug and posts set around the oats to be used in the steer pasturing experiment. Soil samples were taken on the corn plats in the rotation experiments.

The concrete culvert at the entrance to the farm was completed.

Yuma.

During the week ending December 9, the maximum temperature was 75; minimum 20; greatest daily range 40. The minimum temperature of 20 degrees occurred on two consecutive nights, December 8 and 9 and was the lowest temperature experienced since January 6, 1913 when a minimum of 16 degrees was recorded. Young plants of alfalfa, flax, etc., which are just coming up do not seem to be badly injured from this freeze. No land was irrigated this week.

Cowpeas and tepary beans were plowed under as a green manure crop on borders B-11 to 17. Cotton picking was continued. Border C-22 was subdivided, bordered and planted to alfalfas, winter grains and flax for moisture requirement studies. Barley was seeded on E-8 and 9 to be utilized as grain in hog pasturing test. A late crop of Indian alfalfa was harvested from C-27 and 28 and Peruvian alfalfa from C-7.

The thatched roof on the bunk house was torn off and replaced with a shingle roof.

Gains made by the herd of hogs pasturing on Jerusalem artichokes to date are given in a table on the following page.

WESTERN IRRIGATION AGRICULTURE

Field notes.

Yuma (continued).

Dates		Number of Animals	No. of days	Weight, pounds			Gain, pounds			Net return per A.
				Initial						
Initial	Final			Av. per animal	Total	Final	Total	Avg. daily	Avg. per day per animal	
11-3	11-10	10	7	102.2	1022	916.5	-105.5	- 15.1	- 1.51	-$16.78
11-10	11-21	10	11	91.7	916.5	929.0	12.5	1.14	.114	1.99
11-21	11-28	10	7	929.0	92.9	1010.	81.0	11.57	1.157	12.867
11-28	12-4	10	7	1010.0	101.0	1089.	79.0	11.28	1.128	12.57

The hogs were changed from full feed to the artichokes which they refused at first to eat. This probably explains the big shrinkage of the first seven days.

Mr. F. D. Farrell spent four days at the farm and about the project during the week. Mr. George Scott of the Bureau of Animal Industry and Mr. W. G. Wells were also station visitors.

Mr. Kosuke Handa, Director of the Agricultural Model Station of Suigen-Chosen, Korea, Japan, was at the farm Saturday. He is interested in the study of Egyptian cotton.

DEMONSTRATIONS ON RECLAMATION PROJECTS

FIELD NOTES.

Boise.

The tendency of cattlemen toward the Shorthorn breed was illustrated during the week ending December 16, when a number of men brought in young stock purchased at the sale held in connection with the Pacific International show at Portland, this month. Three hundred and five dollars had been paid for a heifer calf, said to be of excellent breeding but a rather inferior individual; $300 for another calf of about the same age and a fairly good individual, and $300 for a yearling bull badly lacking in scale and body. Some cheaper stuff was brought in that was very plain. A Hereford heifer calf was also brought in from the same sale. A comparison with the Shorthorns was in her favor, though she had been bought for $200.

L. M. Beal of Kuna who bought the $300 bull had been given prices on three purebred bulls owned by a local breeder, and was taken to see them. Two six-months-old calves at $125 each and a four-year-old bull at $200 were much cheaper, quality considered, than anything sold at Portland, Mr. Beal said. He bought one of the calves and would have purchased the old bull if he had not already bought the one at Portland.

Eight herds of dairy cows on which records are being kept were tested this week. Some of this work has been unsatisfactory and will be discontinued.

A meeting of Jersey cattle breeders has been called for Tuesday of next week for the purpose of organization of a local breeders' association. The Jersey breed predominates as to numbers in the Boise Valley and records made by them in the testing association have attracted attention to them. The removal recently of two large herds of Holsteins from the Valley makes the time for the Jersey association seem propitious.

Two cases of suspected hog cholera were reported this week. One appeared to be a case of acute starvation and the other pneumonia and indigestion.

A meeting was held at a Grange hall near Nampa on Friday at which lantern slides were used to show the value of better blood and better care in relation to profit in production of beef, pork and dairy products.

Some hogs inspected during the week ending December 23, were suspected of having cholera. One had died but post mortem examination indicated that the cause of the death was septicemia.

A carload of range steers -yearlings and two-year-olds - which are to be fattened on alfalfa hay and corn silage were weighed this week. It was hoped that weighings might be made several times during the fattening period but the steers are so wild that it may not be practicable to attempt this as the

Boise (continued)

fences on the place where they are owned will not hold them. A half-day was required to weigh 30 head.

On Tuesday a number of breeders of Jersey cattle met at Nampa and organized the Boise Valley Jersey Association for the promotion and improvement of the Jersey breed in the Boise Valley. Officers were elected and the meeting adjourned until Wednesday, January 3, when plans for making the organization useful will be outlined.

Some interest has been manifested by ranch-sheep owners in the possibility of grazing sheep cooperatively on the National Forest range, following the plan of the cattle owners. A number of men have been consulted regarding the plan and the Forest Supervisor has been interviewed. So far, however, nothing definite has been accomplished. There is no assurance than range can be secured.

Tieton

Thirteen farms were visited during the week ending December 16. Milk was tested on four farms and 34 cattle in 4 herds were vaccinated against blackleg.

The vaccination was a safeguard against a recurrence of the blackleg outbreak which occured in the Cowichee district two years ago. The cattle are fairly well protected for the next six months as several of the farmers own and have used their own outfits for vaccination.

The local hog market is offering $9.25 per cwt., for grain fed pigs weighing 200 to 225 and $9.00 for the same class at 180 to 200 pounds. This is the first local instance of a market preference of pigs heavier than 200 pounds, as heretofore both weights given above have been included in the same market class. The reason given for the new classification is the better retail demand for lard and larger hams and bacon sides.

The butter fat market has fallen from 42 cents to 40 cents. The Cowichee Cheese Factory payed 49 cents for butter fat in whole milk from December 2 to 18. The present price is 47 cents.

The annual crop census of the Yakima Indian Reservation shows a total area under irrigation of 48,159 and the area which sub-irrigates is 3,116, making a total area under cultivation of 51,272. The acreages of the principal crops in 1916 are:

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes

Tieton (continued).

alfalfa, 26,000; orchard, 3,640; potatoes, 2,331; corn, 1,961; cantalopes and watermelons 1,162, and hops 80. The livestock census shows 3,443 horses, 2033 milch cows, 1,137 steers, 4,737 hogs, and 9,910 sheep. There are 15 silos on the reservation.

Three farms were visited during the week ending December 23, 12 conferences were held at the office and 5 calls for assistance were received.

The annual Farmer's Course was held at the Y. M. C. A. building in North Yakima. The first two days of the course were devoted principally to horticultural interests and the last three days' program featured the livestock lectures. Evening meetings were held in one of two out-of-town communities each evening. W. S. Thornber, the director of extension, was present and in charge of the course. He brought a staff of five men and the home economics specialist. The meetings were well attended in view of the busy season and the interest in the work was especially good. A majority of the evening meetings were well attended. One meeting was scheduled to be held on the project at Cowichee and one at Naches City, adjacent to the project. The Naches meeting was very successful. The Cowichee meeting was postponed on account of a heavy snow storm.

A serious outbreak of rabies is causing a great deal of trouble in the lower part of the Yakima Valley in the vicinity of White Swan. The state department of agriculture has ordered all dogs in the affected and adjacent counties either shot, tied or muzzled. Several cases of rabies have been reported on the Yakima Indian Reservation, the project just south of the Tieton. The latest report is that hunters are to be brought in to begin a systematic fight against the coyotes.

The first real snow storm of the season began this week and is still continuing. The Cowichee district reported over 12 inches of snow Friday afternoon, at which time the more distant parts of Tide Hollow had over 8 inches and North Yakima about 6 inches.

Uncompahgre.

During the week ending December 23, 15 farm visits were made and eleven requests for service and information were received.

DEMONSTRATIONS ON RECLAMATION PROJECTS

Field Notes

Uncompahgre (continued)

The week was spent in arranging for the silo excursion to be held January 9, and with arrangements for the cattlemen's annual meeting which will be held January 5.

On the silo trip it is the plan to visit about 10 silos. This will take in the different types in use on the project and the different methods of handling the silage.

The prices on wheat and other grains have dropped. Wheat can now be had for $1.80 per cwt. Potatoes are not moving and the price is at $1.80. Butterfat is bringing 37¢ at the local market.

North Platte.

During the week ending December 23, 14 requests for service were received and 12 farm visits were made. No outbreaks of cholera have been reported for over two weeks. However two small bunches of shoats were vaccinated this week, one bunch with serum alone and the other with the double treatment.

Thursday was spent on the project and in the valley with Prof. Granlich of the State University, visiting a number of the farms where sheep and cattle are being fed. Two farms were visited on which lambs are being fed with self-feeders. On one farm the plan was a decided success, on the other it was not. In the latter instance the trouble was probably due to carelessness on the part of the farmer rather than to the self-feeder plan.

Another farm was visited on which a bunch of about 2,000 lambs were turned into a corn field last fall and allowed to harvest the corn. The first few days they were allowed to remain in the corn only a short time. As they gradually became accustomed to the corn they were allowed to remain in the field longer until it was safe to let them remain in as long as they wished. This is the second year this farmer has followed this plan of harvesting his corn and he is well pleased with it.

During the month of October and November, reports were received of 920 double deck carloads of sheep that were shipped into the valley for feeding. Reports have not been received from 2 railroad points concerning October receipts, but it is believed that at least 1,000 carloads of lambs, approximately 300,000 head, are being fed in the valley this winter. This is about 185 carloads more than were fed in the valley in 1915 and about double the number fed in 1914.

DEMONSTRATIONS ON RECLAMATION PROJECTS

Field Notes

Truckee-Carson.

During the week ending December 23, the turkey feeding test which was started on one of the ranches on December 7, was terminated, and the final weights of the turkeys made. The outcome of the test was rather disappointing in that a very small gain was made and at a very high feed cost. This was probably due to the fact that the turkeys were taken from the open range and placed in rather close quarters for feeding. They seemed to be restless all the time. The feed supplied was probably not of sufficient variety for best results. It consisted of whole wheat and wheat middlings.

There were 72 turkeys weighed into the experiment at a net weight of 930 pounds. After 12 days feeding, the 72 turkeys were weighed out at a total of 966 pounds. The total feed consumed amounted to 423 pounds. The feed necessary to make one pound of gain amounted to 11.7 pounds. The daily gain per turkey was .041 pound. It seems certain that the poor showing made in this test was due to the close confinement of these turkeys, as they were thrifty when put into the pen.

In another feeding test, 18 turkeys were taken from the open range, placed under somewhat better conditions in a pen, and fed for 10 days with a total gain of 13 pounds. They consumed a total of 68 pounds of corn and wheat. The results show a daily gain of .072 pounds per day per turkey. The grain required to produce one pound of gain in this test was 5.2 pounds. This test was very satisfactory, as compared with the other. The amount of grain necessary to produce one pound of gain was only slightly more than would have been required to produce gains in fattening hogs under the best of conditions, while the value of the gains would net the farmer more than three times as much.

Because of the season's being very late, it was not possible to secure much cooperation in feeding turkeys this year. From information collected, it appears that turkey feeding is conducted with less information regarding results than any other farm industry here.

WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

The Farm Value of Mutton.

In connection with determining the cash returns from different plats in the irrigated rotations on Western Irrigation Agriculture field stations, a scale of farm values has been decided upon for the various crop products. This scale of values also includes a price on the live weight of hogs, which has been estimated at 7 cents per pound.

As a part of the rotation experiment at Belle Fourche, sheep were used for the first time in 1916. It therefore becomes necessary to determine a farm value to be used in computing the gains made by these sheep. As a basis for this estimate, Mr. Ratliffe has tabulated the prices quoted for hogs and sheep of different market grades at Chicago for the last week of each of the months of January, March, May, July, September, and November for the years 1910, 1912, 1914, and 1916, using for this purpose the figures as published in the Breeders' Gazette. These figures include the high and low prices ruling for each of the recognized classes of each kind of live stock. The range between the high and low prices for each class varies somewhat more for sheep than for hogs, and in order to have a single series of figures with which to work, the mean of the high and low was determined for each class. This mean between the high and the low may not exactly represent the mean of the prices paid, but since the range is comparatively narrow the error is probably not great. The data assembled includes 24 price figures for each class of live stock, that is, one price for each of the six months taken from each of the four years enumerated. The mean of this series of prices for hogs of the grade "Choice to Prime Heavy" is 8.62 cents per pound. The comparable figure obtained for sheep is that for the grade designated from "Good to Prime Spring Lambs", which is 8.61 cents per pound. From this data it would appear that for the present at least we might assume the gains made by spring lambs on the rotation experiments to have a farm value of 7 cents per pound, the same as we now use for hogs. In the case of mature sheep of the grade "Good to Choice Ewes", the average of the means is 5.69 cents per pound. This would indicate a farm value of approximately 4 cents per pound for ewes if the same deduction is made as is made for lambs and hogs. However, since the fattening of ewes improves their condition and market value, as well as adds to their weight, it may not be inadvisable to estimate the gains made by them at the same rate as that used for the lambs and hogs. It is suggested therefore that where it is

Field Notes.

Farm Value of Mutton (continued).

desired to estimate the value of gains made by sheep, either lambs or ewes, in our cropping experiments, we shall assign to these gains a value of 7 cents.

C.S.S.

San Antonio.

During the week ending December 23, the maximum temperature was 84; minimum temperature, 18; greatest daily range, 59. Cold weather prevailed throughout the greater part of the week, freezing temperatures being recorded on five days. There has been no precipitation for nearly a month and dry weather and low temperatures have delayed the growth of winter crops very materially.

Practically no field work was done. Labor was utilized in hauling dirt and gravel for resurfacing roads about the buildings and in doing miscellaneous work about the farm.

During the week ending December 30, the maximum temperature was 81; minimum temperature, 43; greatest daily range, 27. Weather throughout the week was warm and pleasant. One or two light showers occurred, the total precipitation being .38 inch.

No field work was done. Labor was utilized in hauling gravel for roads and in doing miscellaneous work.

Mr. W. H. Mercer arrived on December 30 to assume his duties as assistant in dry land agriculture.

Yuma.

During the week ending December 23, the maximum temperature was 71; minimum temperature, 25; greatest daily range, 44. There was no irrigation during the week.

Leveling was continued on the C series. The irrigation system is being cleaned.

Grain sorghums were harvested from plats A13-4, C-7-36, 37 and 38. Sweet potatoes, white vineless variety, were harvested from A10-7, yielding at the rate of 19,036 pounds marketable potatoes per acre.

Corn stalks on B-19 and 20, and sorghum stalks on A14-3, C-7-36 to 38, were chopped up with the stalk cutter. C-36 to 38 was plowed, disked and sorghum roots removed, preparatory to planting alfalfa. A13-4, 14-7, and 15-2 were plowed.

200 ft. of 4-inch drain tile was received to be used in extending the sewer system.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Yuma (continued).

During the week ending December 30, the maximum temperature was 61; minimum temperature, 25; greatest daily range, 28. On account of the rainfall no irrigation was given. The precipitation for the week was .73 inch.

Leveling and ditch cleaning was continued. Fences were constructed around hog lots on E series.

Stalks were cut on plats C-20, D-16 and 24. A14-7 was furrowed and planted to flax. A10-7 and A10-8, and C-36, 37 and 38 were seeded to alfalfa.

The following plats were plowed: A13-4, B-19 and 20, C-6-7-25 and 26, and D-24.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

The week ending December 23 was spent mostly with work in connection with the sheep growing industry. During the week the officers of the Rexburg Wool Growers' Association were visited. This is a cooperative association that was organized in 1904 for the purpose of pooling the wool clip and selling together. From the beginning the association has been most successful. It has grown until it includes the owners of 98 per cent. of the sheep tributary to the railroad branch from Idaho Falls to Ashton. The clip from a little over 100,000 sheep is consigned annually. In 1916 this amounted to about 930,000 pounds.

The wool is consigned early in the season, the owner signing an agreement which binds him to keep the wool of the different breeds and of bucks and black sheep separate, tags sacked as such, all warranted to be in good merchantable order and condition, free from dip or burs, well tied with paper twine and honestly packed. Each owner is responsible for his own wool. Usually the entire clip is bought without the buyer examining it closely as he relies upon the association to furnish the wool as represented. The price received is, of the average, from 2 to 3 cents higher than that received by the unorganized wool growers.

Although not considered at the time of organization, most of the supplies, such as feed, branding paint, salt, sacks, and twine are bought by the association.

All officers serve without pay except the secretary who receives a salary of $75 a year. Expenses are met by an assessment of 2 cents a head on each sheep. This is too much, however, so that it is necessary to make an assessment only every other year.

The membership includes both the large and the small sheepmen. General satisfaction is expressed by the members who wonder why all wool growing sections do not organize in this way.

During the week ending December 30, a circular letter was sent to the men who raise sheep on the farm and meetings held to discuss the advisability of putting out cooperative range bands, made up of the small farm flocks.

At Burley the attendance was 21, and at Rupert, 12. Two men called at the hotel at Burley in the evening to discuss the proposition while four communicated by telephone. Two called at the Rupert office on Saturday evening. There was much interest at the meetings and the problems were discussed for two and a half hours.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

The general opinion was that for the farm with less than 100 head the irrigated pasture was the best proposition, but for the larger flocks a summer range would be of much value.

There were 22 applications for a total of 3500 head of ewes. Of this number, two applications are for 400 head, and two for 300 head each. Five applications are for less than 100 head, and the remainder for from 100 to 200 head.

The putting in of the applications does not insure the success of the enterprise, as they must be acted upon by the Forestry officials who feel that they can take care of only about 1700 head.

A trouble that has been experienced all along is the desire of some of the men with the larger bands to work into the range sheep business. Two men would not apply unless they were promised that they could increase their allotted number each year and withdrew from the meeting.

Uncompahgre.

Eight farms were visited during the week ending December 30, and one hog feeding test was completed and another started.

The Delta County Live Stock Association held their annual meeting at Delta on Thursday. In the evening of the same day a trip was taken to Hotchkiss, Colorado, a point off the Project, for the purpose of conferring with a Jersey breeder in regard to a supply of bulls for project farmers, and also to secure some data on the hog raising industry in that section.

It was found that they marketed 50 carloads of hogs in 1916. It is hoped that it will be possible to cooperate with this section and the Grand Junction section in the matter of procuring better service on the railroad by having regular shipping days and making up enough cars so that through service can be secured.

Butterfat at present is bringing 35¢ locally. Wheat is $2.00 per cwt., barley, $1.90, and corn, $2.25.

Tieton.

Thirteen farms were visited during the week ending December 30, 2 office conferences were held with farmers, and 2 calls for assistance were answered by farm visits. Milk was tested with 8 farmers.

Mr. Elliott reported a steer lame from what appeared to be blackleg. The herd was immediately vaccinated. This is the first

Tieton(continued).

case of blackleg or suspected blackleg reported this fall and winter. A majority of the stockmen, however, are vaccinating against blackleg regularly every six months.

It is estimated that about 200,000 sheep are being wintered in the Yakima Valley this winter. The range along the Columbia River and in the Horse Heaven country has been good this year and sheep are in good condition. Sheepmen began feeding range bands this week. Local sheepmen say that more corn is being used this year than any other grain. Corn can be bought in the ear at $25 per ton, and other grains costs $35 to $40 per ton. It is expected, though there will be some February lambing, that a larger proportion than usual will lamb on spring range.

Authentic reports from the Puget Sound country are that good grade dairy cows are in good demand there with prices in the neighborhood of $100. Condensaries are paying $2 and $2.05 per cwt. for milk. Some Coast milk is being shipped to Spokane to the city milk trade.

North Platte.

Practically the entire week ending December 30 was spent in the office.

On December 20 the Community Club of Mitchell held their first annual "Sheep Day" meeting. The club was started in Mitchell in November, 1915. Since that time it has met every Wednesday noon between 12 and 1 o'clock at the Community Club dinner. Following the dinner a short business session is held and matters of interest to the community are discussed. The club has no by-laws or constitution and no permanent officers other than the secretary. There are standing committees on roads, railroads, and general arrangements.

As the sheep feeding industry in the Valley is growing to be one of the most important enterprises, it was suggested that a "Sheep Day" be instituted, and arrangements were made accordingly. There were 350 present at the club the first "Sheep Day". Men from all over the Valley were present, and several from adjoining states.

After a lamb dinner there was a 3½-hour program, relating almost exclusively to the sheep industry. The principal speakers for the day included Prof. Gramlich, head of the Animal Industry department of the State University, speakers from Omaha, Fremont, St. Louis, St. Joseph, Kansas City, and Denver, and representatives from the Burlington railroad.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley.

During the week ending December 23, 9 farm visits were made, and 38 milk samples were tested. Extreme cold weather prevailed throughout the week.

Sugar Beet Hogging Test.

The following is a report of a sugar beet hogging test recently conducted in cooperation with Mr. Paul F. Sherman, of Ballantine.

On October 10, 46 March pigs, 100 May and June pigs, and one old sow, all of good quality, were turned into a 0.66-acre peice of beets to be hogged off. The beets were left just as they grew and the hogs allowed to do all the harvesting themselves. Measured areas of beets from different portions of the field were dug and weighed in order to obtain an estimate of yield. In addition to the sugar beets the hogs were given some grain during the hogging period. A little grain appears to be necessary with the sugar beets as a sugar beet feed alone seriously affects the hogs' digestion.

The hogs remained on the first field for 9 days when they were turned into an additional field of 0.75 acre, which lasted them for 10 days. The total gain in 19 days from 1.41 acres of beets, with an estimated total yield of 12.3 tons, was 1835 pounds, 1500 pounds of barley and 400 pounds of corn having been fed in addition to the beets. If the gains are valued at 7 cents, and the grain at 1 cent a pound, the return per ton of beets was $8.89.

Boise.

A case of black-leg developed during the week ending December 30 in a herd which was vaccinated with Department of Agriculture vaccine on October 24, the affected animal dying on December 29, within 10 hours after the first symptoms were noticed. The Department vaccine has given almost universally good results, this being the first reported loss following its use, where fresh vaccine was used. The calf that died was very small when vaccinated and possibly had already outgrown any immunity conferred by the vaccination. It had been shut in a small pen where another calf had died in October from black-leg and had been skinned, so that the infection was probably concentrated. Other calves on the place were re-vaccinated.

At the meeting of the Executive Committee of the Farm Bureau on Thursday, it was agreed that the county organization should cooperate with this office as closely as possible in hog-cholera-control work which has been taken away from the County agent's office, if hog cholera should break out again in the Boise Valley.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Truckee-Carson.

During the week ending December 30, considerable time was devoted to the cooperative shipping of hogs. On the 26th, 2 cars containing 130 hogs were shipped. Some of the hogs were loaded into the cars at Hazen on the main line.

The last few days of the week were spent in helping to summarize the work of the Truckee-Carson Cow Testing Association for November and December. It is very gratifying to note the increased efficiency of the cows in the association when the December report is compared with that of November. The members of the testing association must work for a high average production in the herds and not be contented with one or two exceptional animals.

The five herds of the association having the highest average production for November are:

H. J. Long	29.06 lbs.	butterfat	.....	15	cows
A. L. Baker	29.16 "	"	.....	19	"
C. C. Spoon	28.10 "	"	.....	11	"
L. J. Clark	28.37 "	"	.....	10	"
Chas. Myota	33.43 "	"	.....	26	"

The five lowest herd averages of butterfat production were as follows: 11.68, 12.34, 16.04, 16.98, and 17.55 lbs.

The five herds of the association having the highest average production for December are:

C. E. Glazier	37.15 lbs.	butterfat	.....	12	cows
C. C. Spoon	32.54 "	"	.....	10	"
A. L. Baker	32.23 "	"	.....	18	"
W. Larson	30.38 "	"	.....	7	"
L. J. Clark	29.67 "	"	.....	10	"

The five lowest herd averages for December were as follows: 14.88, 14.99, 15.36, 17.66, and 18.40 lbs.

The average production of butterfat per cow for the 511 cows tested in November was 22.52 lbs., and the average test was 4.33 per cent. as compared with 23.77 lbs. of butterfat, and an average test of 4.43 per cent. for the 515 cows tested in December.

The following table shows the per cent. of cows in the association during November and December with production as indicated.

	50 lbs. or over	40 to 50 lbs.	30 to 40 lbs.	20 to 30 lbs.	15 to 20 lbs.	Under 15 lbs.
November	1.56%	2.74%	13.1%	28.3%	23.6%	30.3%
December	1.96%	4.70%	13.7%	36.86%	19.6%	23.33%

FIELD NOTES.

San Antonio.

During the week ending January 6, the maximum temperature was 80; minimum temperature, 34; greatest daily range, 36. .06 inch precipitation was recorded. Warm weather continued throughout the week.

Several plats in the rotation experiments were disked in order to kill volunteer oats. Field C6 was disked for the same purpose. Manure was disked in on several plats. Hauling of manure was continued, the following rotation plats being manured: A6-17 and B4-12. Owing to the large amount of winter killing in the flax varieties, additional small plats of those varieties in field plats were planted early in the week. Removal of the oldest peach trees in orchard A1 was started. Many of these trees were diseased and all of them were old and unthrifty.

Truckee-Carson.

During the month of December, field E was plowed and partially leveled; alfalfa roots were cleaned from field F and the leveling of field B was continued.

Snow fell on December 24, followed by freezing weather, making further field work impossible. From this date until the end of the month the men were employed working about the buildings and grounds and piling manure in the corral.

Final Report on the 1916 Experiment with Pigs on Alfalfa Pasture.

Lot I. The 10 pigs in this lot consisted of 3 Durocs, 3 Berkshires, and 4 Duroc-Berkshire crosses. They were placed in the pasture April 24 at about 9 weeks of age. The Berkshires and crosses were raised on the experiment farm and were in excellent condition at the beginning of the experiment. The Durocs were secured from the Churchill Creamery farm and were in a less thrifty condition.

The area of the pasture was 1/4-acre. It was divided into 2 parts, and the pigs were changed from one side to the other at the end of each week. There was sufficient pasturage until the latter part of August. Four of the pigs were removed September 9 because of the short growth of alfalfa. The remaining 6 pigs were left in the pasture 14 days and then removed to the dry lot for finishing.

A 2% ration of barley was fed throughout the experiment. Gains

Truckee-Carson (continued).

in live weight were credited at 7¢ per lb., and the grain fed was charged at 1½¢ per lb., which is about the wholesale price here.

The Berkshires and crosses made about equal gains. The Durocs never appeared to be in as thrifty condition as the others and made less satisfactory gains. The total net returns from this lot was $24.04, or a profit of $96.16 per acre above the cost of the barley.

Lot II. The 17 pigs in this lot consisted of 3 Durocs, 2 Berkshires, 2 Duroc-Berkshire crosses and 10 grade Berkshires. The Durocs, Berkshires and crosses were about 11 weeks old when placed in the pasture on May 13. The age of the grades is uncertain but was estimated at about 15 weeks. All pigs except the Durocs were in excellent condition at the beginning of the experiment. The area of the pasture was .53 acre, divided into 2 parts as in Lot I. The alfalfa in this pasture was not good, the soil of a part of the field being alkaline, and as a result poorer gains were made than in Lot I.

Because of the poor growth of the alfalfa 7 pigs were removed August 5. The pigs removed consisted of the 3 Durocs, 1 Berkshire, 1 cross and 2 grades. On September 6 the remaining 8 grades were removed and 4 pigs from Lot I were put in. The net return per acre for the full period of 130 days was $63.20, and 2.36 lbs. of barley were required to produce one lb. of gain. This latter figure is practically the same as for Lot I. A summary of the results obtained with the 2 lots is given below:

	Lot I (1/4-acre)		
	1st Period	2nd Period	Total
Date begun	April 24	Sept. 9	April 24
Date closed	Sept. 9	Sept. 23	Sept. 23
Length of period, days	138	14	152
Number of pigs	10	6	-
Total initial weight, lbs.	262	566	-
Total final weight, lbs.	900	625	-
Total gain, lbs.	638	59	697
Daily gain per head, lbs.	0.46	0.69	-
Barley fed, lbs.	1569	81	1650
Cost of barley @ 1½¢ per lb.	$23.54	$1.21	$24.75
Value of gains @ 7¢ per lb.	$44.66	$4.13	$48.79
Value of gains less cost of grain	$21.12	$2.92	$24.04
Return per acre	$84.48	$11.68	$96.16
Daily return per acre	$0.61	$0.84	$0.63
Lbs. of grain per lb. of gain	2.50	1.40	2.37

Field Notes.

Truckee-Carson (continued).

	Lot II (o.53 acre)			
	1st Period	2nd Period	3rd Period	Total
Date begun.....	May 13	Aug. 5	Sept. 6	May 13
Date closed.....	Aug. 5	Sept. 6	Sept. 23	Sept. 23
Length of period, days.....	84	32	14	130
Number of pigs.....	17	10	6	-
Total initial weight, lbs..	629	872	510	-
Total final weight, lbs....	1297	1114	565	-
Total gain, lbs.....	668	242	55	965
Daily gain per head, lbs. ..	0.5	0.8	0.7	-
Barley fed, lbs.....	1533	598	143	2274
Cost of barley @1½¢ per lb.	$23.00	$8.97	$2.15	$34.11
Value of gains @ 7¢ per lb.	$46.76	$16.94	$3.85	$67.55
Value of gains less cost of grain	$23.76	$7.97	$1.70	$33.44
Return per acre.....	$44.80	$15.05	$3.21	$63.20
Daily return per acre.....	$0.53	$0.47	$0.23	$0.49
Lbs. of grain per lb. of gain..	2.30	2.50	2.60	2.36

In order to make these results comparable to those secured at the other field stations, certain of the above data have been calculated on a basis of 1 cent grain. On this basis the results as shown below, compare favorable with those ordinarily secured in the alfalfa experiments elsewhere.

	Lot I (1/4-acre)	Lot II (.53 acre)
Total gains, lbs.	697	965
Value of gains @ 7¢	$48.79	$67.55
Grain fed, lbs.	1650	2274
Value of grain at 1 ¢	$16.50	$22.74
Value of gains less cost of grain.....	$32.29	$44.81
Return per acre	$129.16	$84.55

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Uncompahgre.

During the week ending January 6, 9 farm visits were made and 11 requests for service were received.

A meeting of the Water Users' Board was attended on Tuesday afternoon.

Friday and Saturday the Uncompahgre Valley Horse and Cattle Growers' Association held their annual meeting, where a talk was given on the work of this office, at the request of the members. The meeting was well attended and some very interesting matters were brought up, there being considerable discussion with regard to the proposed increase in grazing fees on the Uncompahgre National Forest. The attitude seemed to prevail among those present, that the fees already were high enough, although it was suggested that the range was worth the 100 percent. increase proposed. Other matters discussed at the meeting was legislation for the improvement of the shipping service. The slow service on the railroads has resulted in 10 and 12 per cent. shrinkage in a number of shipments of cattle during the last few months. The matter is to be taken up with the proper officials in an attempt to remedy this evil.

One call was answered in company with the local veterinarian relative to hog sickness. The hogs were found to be in unthrifty condition. One pig was killed and examined and found tobe affected with peritonitis.

During the week ending January 13, 16 farm visits were made and requests for service were received from 8 farmers.

A silo excursion was conducted, covering 54 miles of territory. Seven farms were visited, where different types of silos were used and the silage fed to beef cattle, sheep, and dairy cattle. Eighteen autos, carrying 76 farmers, made the trip. One farm was visited where low grade second cutting hay is being run through an International ensilage cutter with the result that it is all consumed by the beef cattle on feed. Another farm visited was that of Mr. Westensen, where silage is fed to sheep. Roots are also fed and are cut through the ensilage cutter.

An illustrated lecture was given near Delta during the week.

A visit was made to a farm where range cattle are suffering from enteritis. There have been some losses among calves. It was not possible to determine the source. Some patent stock food has been fed, and it was thought possible the trouble might be due to that, or it might have been caused from the water, which is strongly alkaline.

20 January, 1917.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Shoshone.

During the week ending December 23, 3 farm visits were made, and 23 office calls were received.

Returns were received on the cooperative shipment of cattle, which recently went to Omaha. The car was on the road 9 days, the cattle being fed 5 times en route. The cost of shipment, including the expenses of a man to go with the load was 83 cents per cwt. The average price per cwt. received in Omaha was about $6.00. Bulls and dairy bred steers in fair condition brought this price. One heifer in poor condition brought $5.00 per cwt., while 4 shorthorn steers in good condition brought $7.25. The men who shipped are well satisfied with the results.

During the week ending January 6, 24 calls were received, and 13 conferences were held elsewhere.

Some attention was given to arranging for the annual farmers' institute.

Most of the time was given to arranging for a cooperative shipment of 2 cars of cattle. Since cold weather, farmers have begun to butcher for themselves, so that the town butchers are doing comparatively little killing and there is very little local market for cattle. With the rising price for hay, farmers are very desirous of selling low producing cows and dairy bred steers which cannot be finished so as to sell for a high price.

There is a depression in the dairy business just now, because it is expected that from now on hay will be higher. Much of the alfalfa land is being prepared for beets, and some farmers who are planning to grow beets on a larger scale wish to reduce the number of their milk cows because of the labor requirements.

Huntley.

The first half of the week ending December 30 was spent in the office doing general office work.

During the last half of the week a trip was made to Miles City and Glendive. At Miles City no less than a dozen silos were found that have been erected during the past three years. They are stave silos, mostly of the Iowa type. They have given very good satisfaction. The silage during very cold weather freezes to a considerable depth, but by mixing the frozen and unfrozen silage the farmers experi-

Huntley (continued).

ence very little difficulty in feeding. At Glendive a few pure bred Holstein cattle were located that are for sale at a reasonable price.

Seven farm visits were made during the week ending January 5.

The examination made by the State Veterinarian of the blood samples taken from cows in Mr. Myer's herd during the week ending December 16, failed to disclose any contagious abortion infection.

Tieton.

During the week ending January 6, 16 farms were visited, 3 calls for assistance were answered by farm visits, and 5 by telephone.

The local market prices for farm produce are as follows: butter fat, 38 cents on the farm; potatoes, $28 to $35 per ton; prime steers, $6 to $6.50 per cwt.; hogs, 200 to 225 lbs., $9.25: 175 to 200 lbs., $9 per cwt; alfalfa hay, baled, $14 to $15 per ton. Grains retail as follows: oats, $37.50 per ton; wheat, $49.50; corn, $52.50; bran, $28; wheat shorts, $30; and rice shorts, $25.

The value of farm products in the entire Yakima Valley in 1916 is reported to be approximately as follows:

Fresh fruit	$6,661,000
Fruit products	108,500
Small grains	500,000
Hops	468,000
Vegetables	1,113,030
Hay:	
60,000 tons shipped at $12	
36,000 tons stored at $12	
10,000 tons fed cattle at $6	1,212,000
Livestock	4,036,535
Grand total	$14,099,065

The report compiled from figures which appear conservative finds that the home production of beef cattle doubled in 1916, and the number of hogs shipped fell off one-half. The Holstein men claim to have sold $60,000 worth of breeding animals and the short horn breeders place their sales at $15,000. Cattle feeders estimate from 10,000 to 12,000 head of cattle being fed in the valley

Tieton (continued).

for the spring and summer markets.

A report of a cooperative swine feeding test on the farm of Mr. R. D. Lewis is given below:

Hogging Peas and Barley and Corn.

On March 14 and 15, 1916, 6 aged pure bred Duroc Jersey brood sows farrowed 68 pigs of which number 60 lived to cross the stock yard scales. A few days later 2 other sows farrowed litters of 10 pigs each and both sows and their litters were sold before the pigs were weaned. A ninth sow was barren. Thus, 8 sows in a herd of 9 farrowed 88 pigs. So far as Mr. Lewis' accounts are concerned 80 pigs were raised.

Individual "A" type houses were used. These were 6' x 6' equipped with fenders. The material cost was $3.26 each, and Mr. Lewis built one house per day while doing the regular winter chores. Individual pens were arranged around each house with the panels made for field use.

On June 5, at 82 days of age, the 60 spring pigs mentioned above averaged 35.15 lbs. each. The sows were fed 750 lbs. of shorts while suckling the pigs. Alfalfa and blue grass pastures were the only other feeds. At this date the pigs were in rather poor condition and had made an average daily gain of only 0.43 lb.

On August 7, at 145 days of age, the 60 pigs averaged 53.68 lbs. each. Their feed from June 5 to this date was only alfalfa pasture. The average daily gain during this period was 0.31 lb. During practically the same period Mr. Yates' 5 pure bred Berkshire pigs made an average daily gain of 0.96 lb. on alfalfa pasture supplemented with a 3.3 per cent. ration of shorts. It had been Mr. Lewis' intention to supplement pasturage with grain and the Yates' results support the desirability of that practice.

From August 7 to September 16 the pigs foraged, by the panel method, 3.1 acres of Bangalis field peas and bald barley seeded at the rate of 90 lbs. of peas and 3 pecks of barley per acre. During this time the pigs gave very little attention to the open alfalfa field adjacent to the peas. The average daily gain was 0.93 lb. The gain per acre was 726.4 lbs. During this period the pigs developed from a rangy, paunchy conformation to well fleshed, thrifty form. At the end of the period, at 185 days of age, the pigs averaged 91.22 lbs. each.

From September 16 to October 30, a period of 44 days, the pigs foraged by the same method 9.4 acres of dent corn. Of this about 3 acres was estimated at 50 to 60 bushels per acre, and the rest-in

Tieton (continued).

orchard-at from 35 to 45 bushels per acre. During this period 500 lbs. of tankage and 25 lbs. of a mineral mixture were consumed from the self-feeder. The average daily gain was 2.52 lbs. The gain per acre of corn-deducting the space occupied by tree rows-was 709 lbs. At the end of the period, at 229 days of age, the pigs averaged 202.33 lbs. each. They went directly from the corn field to the market and were an exceptionally well finished bunch of pigs. The price was $9 per cwt., when the bulk of sales were near $8.50 per cwt.

The noteworthy features of the history of these pigs are as follows:

1.- 88 pigs farrowed by 8 sows bred to an aged boar. 6 sows farrowed 68 pigs in 2 days, a good start in securing uniformity.

2.- The 60 pigs were raised only on grain and forage grown on the farm, with the exception of 750 lbs. of shorts, 500 lbs. of tankage and 25 lbs. of mineral, the total cost of which was $26.15.

3.- No definite figures are available for returns for the alfalfa pasture as 18 acres of hay land were open to grazing. Figuring the gains at $7 per cwt., the pigs paid $50.85 per acre for the peas and barley and $49.64 per acre for the corn. The pigs sold at $9 per cwt., hence paying $65.38 per acre for the peas and $62.10 for the corn.

4.- Although the pigs reached 202 lbs. at 229 days of age they would have finished for an earlier market had the rate of gain prior to the time they were turned into the peas and barley been more rapid. Also, the pigs would have been in better condition for grain foraging had they received a grain ration to supplement their alfalfa pasture.

5.-By staying with the hog business during the unfavorable prices of 1915 Mr. Lewis was able to make an excellent profit in 1916.

6.- The farrowing record emphasizes the value of proven aged breeding stock over the practice of fattening two-year-old brood stock and breeding only gilts and yearling sows with young boars.

PRICES FOR DAIRY PRODUCTS IN SALT RIVER VALLEY, ARIZONA.

The following table taken from an advertisement in the Arizona Republican of December 21, 1916, shows the prices paid for milk and cream by one of the large creameries in the Salt River Valley during the first eleven months of the year 1916.

1 9 1 6 .	Sweet Milk	Cheese Milk	Sweet Cream	Churn Cream Delivered
January	36½¢	34¢	32½¢	30½¢
February.....	35½¢	33¢	31½¢	29½¢
March	35¢	33¢	31¢	28½¢
April	36¢	33¢	31¢	28½¢
May	36¢	34¢	31¢	28¢
June	36¢	34¢	31¢	28¢
July	36¢	34¢	31¢	28¢
August	36½¢	34¢	31½¢	28½¢
September	38¢	35¢	33¢	31¢
October	41¢	37¢	36¢	33¢
November	46¢	42½¢	41¢	38¢

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending January 6, the maximum temperature was 64; minimum temperature, 29; greatest daily range, 35. The greater part of the week was cloudy and rain fell on the 3rd and 4th, amounting to a total of .86 inch. As a result of this rain the dirt roads were in very bad condition.

Most of the labor during the week was utilized in clearing and leveling and general repair work. Ditch cleaning had to be suspended on account of the wet weather.

A new hot bed was made and planted to tomatoes, egg plant, pepper and roselle seed.

Sugar and stock beets were planted on B-18.

The old willow posts were removed from the east farm fence, a new wagon box was made and an extension of 200 ft. of 4" tile was added to the drainage system from the septic tank.

During the week ending January 13, the maximum temperature was 70; minimum temperature, 36; greatest daily range, 29. A rainfall totalling .12 inch occurred on the 8th and 13th. Six and one-half acres were irrigated. The winter season to date has been extremely poor for growing crops. Alfalfa pastures are making scarcely any growth while young alfalfa is equally as retarded in growth. The cold weather in early December froze out considerable young alfalfa that was just coming up.

Ditch cleaning, leveling on C series 29 to 35, and clearing on D series 38 to 45 was continued throughout the week.

Ground on A15-2 was prepared and irrigated for early melon plantings. Potato land was irrigated in preparation for planting the following week. Height and trunk measurements were made of the various trees in the deciduous orchard.

The construction of a bird shelter over pots in the "moisture requirement" tests was begun. A new 3 H. P. Fairbanks, Morse engine and 5 x 5 Typhoon pump combination was received to take the place of the worn machine now used for the station water supply.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

The farm visits made during the week ending January 6 have nearly all been to farms of sheep raisers in the interests of a proposed sheep-grazing association. At this time it seems doubtful if a sufficient number of men are interested to justify an organization.

The recently organized association of Jersey cattle breeders held it second meeting at Nampa on Wednesday to discuss further plans of operation and lines of work to be taken up.

The other meetings of the week were held in rural districts where stock-judging demonstrations were given in the afternoons and discussions of dairy subjects, illustrated by lantern slides, at night.

Most of the week ending January 13 was spent in attendance at the conventions of State Dairymen's Association, State Swine Growers' Association, and State Livestock Association, held at Pocatello. While strong programs have been prepared for these meetings the attendance at most of them was disappointing. There was a feeling among those in attendance that the associations had not been made as valuable to the members as they should be, the holding of annual conventions being practically all that any of the associations have ever accomplished. Plans to increase the membership of the associations and to extend their activities were discussed and an effort will be made in that direction.

Reports by H. H. Beier and O. T. Koster on the work of cow testing associations in Idaho, and addresses by Prof. Fred. W. Merrill, Dairy Expert, Chicago; Ben R. Eldridge, Field Dairyman for Utah, U. S. Dairy Division; Prof. Hohn T. Caine III, Director of Extension Work for Utah; Dean E. J. Iddings, University of Idaho; E. M. Ammons, Ex-Governor of Colorado; and H. R. Marshall, Sheep Specialist, U. S. Bureau of Animal Industry, were features of the various programs.

North Platte.

During the week ending January 6 several car loads of fat lambs were shipped to market from this Valley. Among the shippers were F. McCaffree and Mr. Halley, both from the vicinity of Scottsbluff. The former received $13.30 per cwt. for his lambs in Omaha; the latter received $13.35 for four car loads in St. Joseph.

DEMONSTRATIONS ON RECLAMATION PROJECTS:
Field Notes.

North Platte (continued).

These are record prices for lambs shipped from this Valley thus far this year.

During the week final weights were taken in F. O'Neals' hog feeding test, in which 132 spring pigs have been hogging down a 47½-acre corn field since September. Valuing the gains at 9¢ per pound, the shoats paid $30 per acre for the corn. The corn was only fair, being rather thin on the ground which reduced the yield somewhat. Mr. O'Neal was very well pleased with the method of harvesting his corn and with the test. A part of the hogs were marketed directly from the field; their average weight was 204 pounds. Thirty of the gilts will be kept for brood sows. The others will be finished for market in a dry lot. A dry lot feeding test will be made with them. They will receive corn in a self-feeder and alfalfa hay.

The thirty gilts to be kept for brood sows have already been bred as soon as possible and used in a test to determine the cost of raising pigs up until about three months of age. Mr. O'Neal will keep a record of all feed fed the sows and their pigs from breeding time until the pigs are about three months old. At that time they will all be weighed again. This is the first test made here of this nature. It should be very interesting as well as valuable. The test was started upon Mr. O'Neal's suggestion.

Last spring two brothers on the Project, ages 11 and 14, joined the county pig club. They borrowed money from their father with which to buy three pigs each and the necessary feed. Recently the boys sold their six pigs as fat hogs. After repaying their father the money borrowed from him, they had a net profit of $57.50. Both boys will enter the Brood Sow and Litter project of the pig club for 1917.

Two lots of fat lambs shipped from the Valley during the week ending January 13 brought $13.40 per cwt. on the market. This is an advance of 5¢ over the highest price received for lambs last week.

One small sheep feeder in the Valley marketed the last of his fat lambs this week. After deducting the cost of all feed fed the lambs (alfalfa hay, beet tops, and corn) he figures he made a net profit of $2.35 per lamb on 485 head.

An order for a car load of shoats, weighing from 60 to 100 pounds, was received from the State Serum Plant at Lincoln. On account of the scarcity of shoats of this weight for sale, the order could not be filled. Some shoats are changing hands on the Proj-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

ect for $8.50 - $9.25.

Two bunches of shoats, 67 and 57, respectively, were given the double treatment for cholera during the week. They were all well at the time of vaccination but had just been bought to go on farms where there had been cholera recently.

Shoshone.

During the week ending January 13, 4 farm visits were made, 19 office calls were received, and 19 other conferences were held.

Most of the week was spent arranging for a cooperative shipment of cattle.

A meeting of the executive board of the Shoshone Project Farmers' Institute was held in this office to arrange for the institute meetings.

Some attention was given to the management of the cooperative creamery, the present manager having resigned to take effect March 1.

One of the Project farmers recently purchased from the Nebraska Agricultural College a Holstein bull whose four nearest dams have records averaging 700 pounds of butter fat in a year. This farmer intends to sell breeding stock.

Tieton.

During the week ending January 13, 9 farms were visited, 5 calls were answered by farm visits, 6 conferences were held at the office, and one lecture was given.

Local prices for hogs have reached $10 per cwt. for prime fat hogs weighing from 200 to 250 pounds. The butter fat market is unchanged at 35 cents per pound.

During the week ending January 20, 17 farms were visited, 12 office conferences were held, and milk was tested with 4 farmers. Ten of the farm visits were in regard to the quality and price of cows which are for sale. One illustrated lecture was given.

There is some demand for good cows on the Project. Plenty of cows are advertised for sale, but good cows are rather scarce and are commanding a comparatively high price. The desirable cows are priced at from $85 to $110. Others can be had from $40 up.

Mr. H. R. White, a Sunnyside Project farmer, has built up a Holstein herd in a conservative manner. Nine years ago he bought 5

Tieton (continued).

grade cows, 1 pure bred cow, and a pure bred bull. He determined the poorest grades each year, as well as he could without weighing and testing the milk, and sold them. The first 11 calves from his pure bred cow and her daughters were heifers. A bull calf was born dead. His present herd is composed of 9 producing daughters and granddaughters of the original pure bred cow, and 6 pure bred heifers. One of the original grade cows, 2 of her heifers, and 6 other grades will be sold.

The value of the 1916 Tieton crop is practically double the value of the 1915 crop, according to the U. S. R. S. annual survey. The 1916 total is $1,102,536, and the 1915 total was $668,650. The return per acre in 1916 was $52.50, and in 1915 was $37. There are 1100 farms on the Project representing 79 per cent. of the irrigable area.

3 February, 1917.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending January 20, the maximum temperature was 65; minimum temperature, 29; greatest daily range, 18. The total precipitation was .23 inch. Cold, wet weather prevailed throughout the week, making it very disagreeable.

During the first part of the week some gravel was hauled for surfacing roads. Harness was washed preparatory to oiling, and other miscellaneous work was done. Considerable labor was used in the hand weeding of the flax experiment on Friday and Saturday. A few early vegetables were planted in the garden.

Truckee-Carson.

During the week ending January 13, the maximum temperature was 31; minimum temperature, -16.

During the week ending January 20, the maximum temperature was 22; minimum temperature, -25.

On account of the severity of the cold weather during the two weeks but little work was done aside from the chores. Ten nights out of the fourteen registered below zero, the lowest being -25. The mean minimum temperature for the week ending January 20 was -18.4. All of the water pipes and most of the drains were frozen. The expense of thawing them out will be considerable it is possible to use the city electrical outfit which is capable of thawing several hundred feet of pipe at a time without uncovering. There are apparently few houses in Fallon which do not have frozen pipes. No attempt has yet been made to relieve the situation as the weather continues cold.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Uncompahgre.

The greater part of the week ending January 20 was spent at Fort Collins in attendance at the Farmers' Congress at the Agricultural College.

Some time was spent in visiting farmers where beet pulp is being fed to steers. The output of the beet pulp from the sugar factory at Fort Collins is fed by farmers mostly. A few feeders have rented yards near the factory and are feeding to some extent. Low grade molasses is fed with the pulp in all cases. At some of the plants in the State molasses is being sold in the East for special purposes, and the price received makes it impossible to purchase for feeding purposes. However, this is not the case at Fort Collins. The molasses is sold to feeders at $10.00 per ton. The pulp costs 50¢ per ton directly from the factory or 75¢ from the pit where much of the water has been drained off.

The molasses is warmed and poured on the pulp in some cases and in others the steers are allowed to run to a trough and help themselves to as much molasses as they will take. The latter method is not found desirable as bad effects from scouring often result. The steers are put on full feed of pulp as soon as possible and large steers consume as much as 130 pounds in a day. The pulp is hauled into the yards and placed in troughs built up off the ground. Six to eight pounds of molasses is as much as an animal can stand in a day.

As roughage, alfalfa or straw is used. When alfalfa is used it is often cut and mixed with warm molasses, so that the molasses in the warm condition is absorbed by the hay. The yards visited were feeding straw and cottonseed cake to the steers, with the factory by-products and very fair results are being had.

Saturday was spent at the stock yards in Denver in watching the sale of hogs. A price of $11.05 was received for one lot of choice hogs. The market was filled with poorly finished animals due to the high priced feeds. Many loads were received which were made up of all classes of hogs. These were divided by the salesmen and sold in separate lots.

Four days of the week ending January 27 were spent at the Denver stock yards and in attendance at the Western Stock Show.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

A very strong showing of beef cattle, both car lots and breeders' entries were made in the Show. There were more Herefords shown than any of the other beef breeds.

The showing of dairy cattle was better than formerly. Some very good individuals in all of the breeds were shown. Inquiries were made of the breeders of dairy cattle for breeding stock.

Four of the Project farmers were present at the Show for the purpose of selecting breeding stock from the Duroc-Jersey breeders. Assistance was given in the selection of four bred gilts and a boar. The prices paid for the gilts were $75 each and $40 was paid for the boar. The showing of hogs was very fair considering that it was all western bred.

The Hereford sale was attended in which the grand champion bull of the Hereford show was sold for $5100.00. He was bred and raised in Montana and was purchased by a Kentucky breeder. Other prices received ranged from $400 to $4250.

Shoshone.

During the week ending January 20, 23 office calls were received, and 5 other conferences were held.

Most of the time during the week was given to arranging for a cooperative shipment of cattle. Two carloads, consisting of 58 head, were shipped, 26 men cooperating in the shipment.

Some attention is being given now to arranging for grass pasture tests. An article on grass pastures was written for the local papers.

There is a tendency on this Project toward the use of so-called dual-purpose cows, since beef has become so valuable. This tendency has been encouraged by lack of market for veal, so that it has been considered necessary for the farmer to keep steers till about 2 years of age.

FIELD NOTES.

Yuma.

During the week ending January 20, the maximum temperature was 62; minimum temperature, 29; greatest daily range, 29. A rainfall amounting to .31 inch fell on the 18th, 19th and 20th. A trace of snow fell on the 16th.

The leveling of C-29 to 35 series was completed, and work commenced on the B pasture, lower level. Ditch cleaning and clearing on E-42 to 45 was continued throughout the week.

Stalks were cut on D-21, castor beans, and C-19, corn plats. B-1 to 5, D-6 to 9-11 and 12, newly seeded alfalfa plats, were reseeded on account of poor stand.

The following plats were plowed: A12-2, 13-6, 15-3, C-19, D-10 and 16.

A15-5 was planted to watermelons. Strawberries were set out on $A\text{-}13_7$.

Harness was oiled and general repair work was done on the rainy days.

A new three-horse Fairbanks, Morse engine and a 5x5 Typhoon pump, geared to engine for pumping the supply of water was installed during the week.

During the week ending January 27, the maximum temperature was 72; minimum temperature, 30; greatest daily range, 38. On account of the rains during the preceding week no irrigation was needed.

Leveling on B pasture land and clearing on E-42 to 45 was continued during the week.

Plats A12-2-3 were plowed and planted to Irish Cobbler potatoes. A14-3 was plowed. A13-4-6 were furrowed, and cucumbers, cantaloupes and vines planted on the beds; later, the hills were covered with oiled paper. The asparagus bed was plowed, fertilized and disked. Castor bean stalk were removed from B-21. Numerous small grain and sorghum samples were threshed during the week.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Huntley.

During the week ending January 20, 13 farm visits were made and 57 milk and cream samples were tested for farmers.

The dried beet pulp which was obtained by the Billings Sugar Company for a few Project farmers arrived during the week and is being tried out. The quantity obtained, however, is so small that it is unlikely that a fair estimate of its worth will be obtained by those trying it this winter.

During the week ending January 27, a trip was made to Bozeman and arrangements were made for a farmers' institute to be held at Ballantine March 1, 2 and 3, and one trip was made to Billings. The remainder of the week was spent in doing office work.

Tieton.

During the week ending January 27, 20 farm visits were made, 3 calls for assistance were received, and 7 office conferences with farmers were held.

The greater part of the week was spent in assisting farmers in selecting cows. On Monday it was learned that a high grade herd in the Ahtanum Valley was for sale. This herd of 20 cows was visited and 12 desirable cows were selected. Arrangements were then made with the agent for the sale to meet a number of Tieton farmers at the farm on Thursday. Prior to Thursday Tieton farmers who had requested assistance in locating cows were visited.

The prices asked for the cows were $100 each for any number less than 10 or $900 for 10 head. A price of $1060 was finally secured for the 12 heifers and cows selected. Each cow was then priced according to her individual merit and the proportionate prices were adjusted to total the purchase price for the lot.

Local bankers had previously been visited and loans for purchasing cows were discussed. The sentiment was that farmers of unquestionable character who had sufficient feed on their farms would have no difficulty in buying good cows on their personal notes. The interest rate secured was 8 per cent., payments to be made monthly with an agreed percentage of the cream checks. These payments will amount to approximately $2.50 per month per cow.

The local market is $10.50 per cwt. for finished 200 to 250-lb. pigs and $10.25 per cwt. for 175 to 200-lb. pigs in good finish. Seattle top quotations are $11.15 per cwt. and Portland "tops" are $11.05 with the bulk of packing grades at $11.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

LIVE STOCK PRICES AT PORTLAND, OREGON.

As Portland is the principal livestock market of the Pacific Northwest, and hence for several of the Reclamation Projects, the following figures, compiled from the "Portland Livestock Reporter" for January 29, 1917, will be of interest. The figures show the top prices paid at the North Portland yards during the months of November, December and January, during the period beginning November 7, 1914, and ending January 29, 1917. In each column the figures for November and December are for the first of the two years indicated at the top of the column, and those for January are for the second of the two years. For example, the figures in the first column are for November and December, 1914, and for January, 1915.

	1914-15	1915-16	1916-17
Steers,			
November	$7.50	$7.00	$7.30
December	8.00	7.90	8.25
January	8.00	7.90	9.00
Cows,			
November	6.25	5.75	6.15
December	6.85	6.75	7.00
January	7.00	7.00	7.75
Hogs,			
November	7.55	6.25	9.85
December	7.60	6.90	9.90
January	7.35	7.60	11.35
Sheep,			
November	6.35	7.50	9.25
December	7.50	8.25	10.50
January	7.80	8.55	12.25

Important points shown in the table are: The extremely high prices during the past three months for hogs and sheep, the prices for steers and cows having been comparatively little higher than they

Live Stock Prices at Portland (continued).

were during the corresponding period two years ago; the extreme fluctuations in prices for hogs, indicating instability of production and distribution; and the consistently increasing strength of prices for sheep, reflecting the constantly growing demand for mutton. Except for one instance, top prices were lower in November than in December and January following.

Uncompahgre.

During the week ending February 3, 9 farmers were visited and requests for service were received from 11 farmers. 24 samples of milk were tested for butterfat.

Tuesday was spent in testing milk samples for 6 farmers and in completing two hog feeding tests. In one of these tests 10 shoats were fed ground barley and wheat bran for a period of 30 days through a self-feeder. During this period the gain was 395 pounds at a cost of $7.97 per 100 pounds. The other test included 14 shoats for the same length of time. These were fed sugar beets, potatoes, bran, ground oats and barley. The total gain in this case was 406 pounds at a cost of $7.71 per 100 pounds. The cost is high on this lot for the class of feeds used. This is due to the fact that too much wheat bran was used in the ration.

About one carload of choice bulls from the stock show at Denver were imported by Western Slope stockmen. About half of them were for Project stockmen. They were of very good quality of the Hereford and Shorthorn breeds. They ranged in price from $200 to $500 each.

A hog buyer from Ogden, Utah, visited the Project during the week and bought 10 carloads of hogs at $9.80 to $10.50. They were shipped to Ogden to be used by a packing plant there.

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes.

THE DEVELOPMENT OF LIVE STOCK INDUSTRIES ON THE TRUCKEE-CARSON PROJECT IN 1916.

The following is a summary of the report made by Mr. L. E. Cline on the development of live stock industries on the Truckee-Carson Project during the year 1916. In connection with this development, Mr. Cline has paid attention chiefly to the dairy industry, but he has paid attention also to the development of the swine and poultry industries, and, to a less extent, to the sheep and beef industries. The usual state and federal cooperation has been had in this work.

Dairy Industry.

Dairying has continued to be the principal agricultural industry of the Project. The industry first became important in 1914, at which time the price of alfalfa hay was extremely low and the demand for it was weak. This condition lent encouragement to inefficient dairying, including the importation of comparatively inferior dairy stock, as even poor cows furnished a kind of market for the hay. During the last year the demand for alfalfa has been strong and good prices have ruled. This has resulted in profound readjustments in the dairy industry on the Project.

Stock Population.-- The Reclamation Service survey shows that in November, 1914, there were 1503 producing cows on the Project, as compared with 2579 in 1915 and 2537 in 1916. At the end of 1915, 346, or 69 per cent. of the farmers on the Project, were engaged in the dairy business. A comparison of the number and per cent. of farmers engaged in dairying at the close of 1915 and at the close of 1916 is given below, together with the percentage of farmers having herds of the sizes specified:

	1915	1916
Total number of farmers	502	516
Number of farmers engaged in dairying	346	260
Per cent. of farmers engaged in dairying	68.7	50.4
Per cent. of farmers owning fewer than 10 cows	51.9	33.9
" " " " " 10 to 20 cows each	10.3	11.6
" " " " " 20 to 30 " "	4.9	2.5
" " " " " more than 30 cows each	1.5	2.5

The above table shows a substantial decrease in the number of people engaged in dairying in 1916 as compared with 1915, and indicates something of the readjustments that have taken place. A

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Development of Live Stock Industries (continued).

large number of farmers with small herds have gone out of the business while the number of farmers having herds of the largest class has increased. This readjustment is regarded as normal in view of the economic conditions during the two years. During the year 1916, there were imported to the Project 128 grade females and 54 registered females, most of which were Jerseys. There were also imported registered bulls, as follows: 9 Jerseys, 5 Holsteins, and 2 Guernseys.

Breeds and breeding:-- No tendency was noted in 1916 for the dairymen to change from one breed to another. The breed preferences on the Project are for Holsteins, Jerseys, Shorthorns and Guernseys, in the order named. There are certain disadvantages associated with this variety of breeds in a small community. It seems likely that, as the industry develops, local preference will be settled upon one, or at most two, breeds, so that it will thus be possible for the dairymen to engage more effectively in community breeding and other cooperative activities.

Herd Improvement:-- There has been marked evidence of improvement in practically all dairy herds. The industry during the past two or three years has had the advantage of good bulls, practically every herd of any consequence now being headed by a registered bull of the breed predominating in the herd. During the year 1916, in addition to extensive miscellaneous testing, including the analyses of 554 milk samples, there was organized on the Project a cow testing association, which began operations November 1. There was a strong tendency throughout the year to discard inferior stock, and the results have appeared conspicuously in the average production per cow. While the number of cows milked in 1916 was somewhat below the corresponding number for 1915, the total production of butter-fat was materially higher than in 1915. Approximately 80,000 pounds more butter-fat was marketed in 1916 than in 1915, the increase amounting to about 29 per cent. This fact, together with the fact that fewer cows were milked, indicates a very marked increase in efficiency. This was caused chiefly by the elimination of low-producers and the substitution of better cows.

Feeds and feeding.-- Feeding conditions have remained practically unchanged since the report of 1915. Alfalfa hay is the sole cow feed in practically all herds. The third, first and second cuttings of alfalfa are preferred, in the order named. There are now three silos on the Project, two of which were filled in 1916, and the owners are well pleased with the results they are securing.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Development of Live Stock Industries (continued).

It is expected that a strong interest in silos will develop during the year 1917, a number of indications of such interest already having been noted.

Equipment.-- The year 1916 witnessed a marked improvement in dairy equipment, particularly regarding shelter and feeding corrals. Twenty-seven new cow barns were built. Other improvements will be made as fast as funds can be secured. While, because of climatic conditions, shelter is perhaps less necessary here than elsewhere, some kind of shelter is needed during two or three winter months.

Diseases.-- Contagious abortion continues to be the most important disease of dairy cattle on the Project. Educational work, looking toward control of the difficulty, made good progress during the year. The wide prevalence of the disease was indicated by an investigation of the health records of 1230 cows, which showed 170 abortions during the past two years. Much work has been necessary as a result of the presence of abortion, particularly with regard to sanitary measures, and much of Mr. Cline's time has been devoted to it. Some tuberculin testing was done in cooperation with the veterinary department of the University of Nevada during the year. As the result of the educational work in this line the farmers are coming to a better understanding of this disease.

Production and marketing.-- From the available records it is estimated that in 1916 a total of 408,720 pounds of butter-fat was marketed by the project dairymen, at an average price of 29.3 cents a pound, making a total value of $119,755. The local creamery at Fallon absorbed the major part of this output, the remainder being shipped as cream to Reno. The creamery purchased during the year 351,120 pounds of butter-fat, the monthly receipts ranging from 25,455 pounds in November, to 33,961 pounds in July. The average price paid by the creamery was 29.32 cents a pound. The price ranged from 25.05 cents in May to 34.9 cents in November and December. It is to be noted that the production during the year was highest during the spring and summer months, when the prices paid were lowest. An effort will be made to bring about readjustments in the time of freshening so as to secure a better utilization of the high prices paid during the winter months. At present, the majority of the cows freshen in the springtime, but, as the feed used is the same throughout the year, there seems to be no particular advantage in spring freshening. It is estimated that if the cows had freshened so that the high

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Development of Live Stock Industries (continued).

production would have been in September, October, November and December, instead of from May to August, inclusive, the total value of the butter-fat output would have been increased approximately three thousand dollars. The quality of the butter manufactured by the local creamery has improved materially since May, when a systematic method of gathering cream by auto-truck was inaugurated. Under this method the bulk of the cream is gathered at least every other day, one cent per pound of butter-fat being charged for the collection and delivery.

Relationship to other industries.-- In the adjustment of agricultural industries which is taking place on the Project, dairying will bear an important relationship, particularly to sugar beet production and to swine production. The manure produced by dairy cattle will be utilized largely in the production of sugar beets, and swine will be used extensively in the utilization of skim milk. These relationships are gradually becoming adjusted, but as the factory will not begin operations until the fall of 1917, it is yet too soon to determine accurately what the industrial grouping will be.

Cooperative features.-- The principal cooperative features of the dairy industry in 1916 involved the delivery of cream, which has already been mentioned, and the organization of a cow testing association. The cream delivery activities are not cooperative in the ordinary sense but they nevertheless involve community action. The cow testing association, which began operations November 1, made excellent progress and promises to be an important factor in the future development of dairying.

The Swine Industry.

According to the Reclamation Service survey there were on the Project at the close of 1916 a total of 6,092 hogs, an increase of 29.9 per cent. over 1915, and 59 per cent. over 1914. The following table gives comparisons of 1915 and 1916:

	1915	1916
Per cent. of white settlers owning hogs, ...	53.5	52.5
" " " herds containing less than 10 hogs, ...	52.	56.
" " " " " 10 to 20 hogs, ...	28.2	21.4
" " " " " 20 to 30 hogs, ...	8.17	8.48
" " " " " more than 30 hogs, ...	11.5	12.54

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Development of Live Stock Industries (continued).

While the total number of hogs increased materially during the year, the percentage of farmers engaged in swine production decreased slightly. The increase in the swine population on the Project has been largely in the herds having more than 30 hogs. These herds are maintained on the old grain farms where they are utilized in harvesting waste grain in stubble fields.

The predominating breed of hogs on the Project are Duroc-Jerseys, Berkshires, Poland Chinas, and O.I.C., ranking in importance in the order named. There has been little improvement in the equipment used in hog production. This doubtless is due to the fact that the industry is not firmly established, which, in turn, results from the high prices and scarcity of grain. The principal feeds for hogs are alfalfa hay and skim milk in winter, and alfalfa pasture and skim milk in summer. Some large herds are maintained on alfalfa pasture alone during the summer months. Hogs are prepared for market on a grain ration consisting of rolled barley or ground wheat and barley mixed.

The principal development in connection with the swine industry in 1916 was the inauguration of cooperative marketing. Previous to July 1 there had been no cooperative marketing activities and this placed the small growers at a decided disadvantage. Through cooperative shipping, the farmers have been able to market their hogs with no more expense per hundred pounds than if each shipper had a carload. During the year, a total of 1,079 hogs were shipped cooperatively by 89 different farmers, the consignments ranging from 1 to 50. In each shipment the hogs belonging to each man were given a distinctive mark and were weighed and sold separately at Oakland and remittances were made direct to individual owners. With all the cooperative shipments made during the year there were no losses in transit and no confusion of identification marks. The shipping time ranged from 30 to 36 hours, with one feed in transit. The average shrinkage was about 7 per cent., and the total shipping cost, including shrinkage, ranged from $1.10 to $1.25 per hundredweight. The San Francisco prices ranged from $8.00 to $8.75 per cwt. for the first shipments, to from $8.25 to $9.50 for the later shipments.

There were very few losses from disease during the year. An outbreak of cholera resulted in the loss of 4 hogs, but the disease was effectively controlled. There were some digestive difficulties due to improper feeding and there were some complaints regarding lice and worms, but information disseminated in 1915 regarding the control of these pests seemed to have had a beneficial effect.

The principal work in feeding has been done in connection with cooperative marketing, particularly in finishing hogs for mar-

Development of Live Stock Industries (continued).

ket. The tendency among the ranchers was to ship their hogs in a badly finished condition and there was a lack of information as to how these hogs could be finished on the available feeds. Some tests were conducted along this line and furnished information which proved valuable as to the methods and costs of finishing.

The Poultry Industry.

The poultry industry continues to increase in importance. This has been true particularly in connection with turkey production. In 1915, 197, or 39 per cent. of the white settlers, were engaged in rearing turkeys. In 1916, the number had increased to 278, or 46 per cent. of the farmers. The Reclamation Service census for 1916 shows a total of 15,239 turkeys raised during the year, an average of 64 per grower. The local express company shipped in November and December, 1916, 150,000 pounds of dressed turkeys, as compared with 74,000 pounds shipped during the corresponding period of 1915. Definite corresponding figures are not available on chicken production. It has been ascertained, however, that 30,000 White Leghorn baby chicks were imported in the spring of 1916. Most of the cockerals of this importation were returned to the coast markets as broilers and fryers, and the pullets were kept for egg production. The principal feeds for poultry are green alfalfa and insects in the summer, and unthreshed grain, cured alfalfa, and skim milk in the winter.

There is practically no equipment on the Project for poultry production. It is estimated that one hundred dollars would cover the cost of equipment used in the raising of more than 15,000 turkeys in 1916. The loss of poultry from predatory animals is large, coyotes and bobcats causing the greatest loss. There is need for woven enclosures and roosting places in order that these losses can be eliminated.

During the year special attention was again paid to poultry marketing, the work consisting chiefly of informing the San Francisco markets regarding turkeys available for shipment and in keeping the local producers informed as to market conditions and requirements. Practically all the sales of turkeys now made are for cash on delivery at the cars at Fallon, and in the fall of 1916 some advance sales were made with partial payment in advance to the farmers.

Development of Live Stock Industries (continued).

Sheep and Beef Industries.

The sheep industry is probably the least developed of the live stock industries on the Project. The number of sheep owned on farms increased from 4,710 in 1915 to 5,452 in 1916. The farmers having sheep have decreased from 15 per cent. in 1915 to 12.4 per cent. in 1916, some of the smaller flocks having been absorbed by the larger herds. These figures do not include any of the large number of sheep brought to the Project for winter feeding. During the year a number of registered Hampshire and Shropshire bucks were imported into the valley and one flock of 25 registered Hampshire ewes was brought in. Because of the absence of good range and pastures most of the herds of sheep must be kept in corrals or yards. The loss from bloat on the exclusive alfalfa diet is one of the difficulties experienced in the development of the industry.

The beef industry is confined almost exclusively to a few old ranches of large area. No important work on this industry was done in 1916.

Numerical Summary.

During the year 1916 a total of 1,252 calls for assistance were received, as compared with 1,174 calls in 1915. The calls in 1916 were for information on a wide variety of subjects connected with live stock industries. The principal items are included in the following table:

Calls for assistance,	1,252
Office visits,	311
Farm visits,	536
Babcock tests made,	554
Circular letters and newspaper articles,	18
Hogs marketed cooperatively,	1,079
Consultations regarding:	
Buying cattle,	68
Cooperative tests,	25
Herd management,	17
Herd testing,	134
Impaction,	152
Udder difficulties,	106
Marketing hogs,	375
Bloat,	17

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Development of Live Stock Industries (continued).

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka.

Report of Agricultural Conference at Pocatello.

The week ending January 13 was spent in conference with the Agricultural College faculty, the field men of the counties, state and government, and dairymen, swine-growers, seed and potato growers, and other farmers from all sections of southern Idaho. The meetings of the combined agricultural associations were held at the Idaho Technical Institute in the form of a Farmers' Short Course during the week. These are always of value for two reasons, first, in getting a line on the exact conditions elsewhere, and, second, as an indication of the interest in the various agricultural industries and the trend of popular opinion. Naturally, most of the attendance is local, although there is always a number that come from a distance and remain for a part or all of the week. Thirteen farmers from the Minidoka Project attended.

While the attendance at the dairy meetings was not as large as in the past, the interest was good. An opinion that kept appearing, mostly in private conversation, was that dairying with such high priced hay is an impossibility. As the price of hay has ranged from $10 to $16 in different sections, while the price of butter fat has been above 35 cents all winter, the absurdity of this theory is apparent to all who have had dairy experience elsewhere, or who are dairying properly now. However, it is the general sentiment, and is an indication of the unfortunate state of affairs existing in southern Idaho, and of the problems confronting the field men.

The dearth of interest in swine growing was indicated by the fact that only one of the 12 officers of the association was present, and he only one day. As the officers are all public spirited men, who for the most part have attended regularly, this is taken as a sign of discouragement. Idaho has gone through a two-year period of abnormally high prices of grain and comparatively low prices of hogs. The result has been that the hog population has decreased from 50 to 75 per cent. in different sections. The unloading tendency is still in evidence. A favorable sign, however, was that representatives of three packing plants, Portland, Salt Lake and Los Angeles, were present. Of these, both the Portland and Salt Lake men were able to make optimistic statements regarding the future. The Los Angeles representative was of the opinion that the time was soon coming when their markets would not be open to the southern Idaho producers as they would be able to get their supply from closer points. Idaho is still going through the development stage, making much re-adjustment necessary. There

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

is no doubt that many farms were largely overstocked with hogs. The tendency of the western farmer is to go to one crop or one industry rather than to diversify. A few years ago the farm carrying from 300 to 700 head of hogs was common. Most of these are out of the business today. As the losses were usually great, and the care was not good, these never did pay large profits. The man who has made money out of hogs is the one that kept such a number as his farm was able to carry at a profit, utilizing all the waste feeds. Likewise, the man who has done best with dairy cattle is the one that has looked more to a large production from a small number of cows rather than to an average production of a a large number. This is a lesson that the farmers are learning but slowly. The farm with half or more of its acreage in clover or alfalfa seed is becoming common. Among the live stock industries there is a tendency of some farmers to rearrange their farms so as to carry a large number of sheep.

The sheepmen were very optimistic and quite enthusiastic over their prospects. All prophesy a continuance of the present high prices over the ensuing year. The price of wool is expected to be between 40 and 45 cents. The sheepmen are mostly progressive and are much interested in learning of the best types of lambing sheds, systems of feeding, methods of management and all else that will add to the profits of the industry. The present high prices and corresponding large profits are not making them careless of details but is having the opposite effect.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Truckee-Carson.

During the week ending January 27, the maximum temperature was 42; minimum temperature, -7.

During the week ending February 3, the maximum temperature was 54; minimum temperature, -3.

Messrs. Cline, Curtis and Headley attended the Farmers' Short Course at Reno. Mr. Cline discussed "Dairy Conditions on the Truckee-Carson Project"; Mr. Headley, "Sweet Clover as a Forage Crop"; and Mr. Curtis, "The Reclamation of Alkali Soils".

A manure spreader was received at the Experiment Farm and has been set up. Bids have been sent in for 15 tons of gypsum to be used in the continuation of the alkali experiments.

Abnormally cold weather continued almost unbroken throughout the month so that nothing in the way of field work was possible. The water system is still frozen. The mean temperature for January was 17.1 degrees below the average mean for the past 12 years. The absolute minimum for the month was 25 degrees below zero, which is 24 degrees lower than the average minimum for 12 years.

Yuma.

During the week ending February 3, the maximum temperature was 70; minimum temperature, 33; greatest daily range, 37.

Three men were employed the greater part of the week in cleaning the irrigation ditches. Some clearing was done on the E series. Most of the low land in the B pasture was leveled. The north half of the B pasture, planted to Sudan grass, was plowed, and the following plats were cultivated: A10-5 and D-14, flax; D-15, field peas; and A13-8, strawberries.

Pruning was begun on A-18 to 23, date orchard. Cuttings for propagating were made from the rose plantings. A ton of milo, for feeding the work stock, was purchased and hauled out from Yuma.

San Antonio.

The warm weather of the past few weeks was suddenly ended on Wednesday of the week ending February 3 by the arrival of

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio (continued).

a "norther". By Friday a minimum temperature of 14 degrees was reached. The maximum temperature recorded was 86; greatest daily range, 52. There was no precipitation during the week.

A loss of from 30 to 40 pounds each was noticed in the weight of the steers in the pasturing experiment when turned from dry feed into the green oats on field C4. Labor was utilized in cultivating the orchards, A1, A3, B3, C3 and E3. The pruning of palms in orchard E3 was continued. Milo seed was put through the fanning mill and seed corn was shelled. Digging the holes in the root rot experiment on field C5 was started. The use of blasting powder to loosen the earth will be resorted to. Mr. R. E. Blair visited the station from Thursday to Saturday and left for Washington with Mr. Letteer on the 3rd.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

North Platte.

Three days of the week ending January 27 were spent at the Denver Live Stock Show and in visiting the stock yards. It seems to be the general belief that the show was better this year than ever before. Evidently this show is rapidly growing to be one of the most important live stock shows in the country. All departments of live stock were well represented with the exception of breeding sheep. The grand champion car load of hogs were Hampshires and sold for $16.75 per cwt. The reserve champion car load were Duroc Jerseys and sold for $13.50. As a whole the swine exhibit was good. The Poland Chinas and Durocs made up the greater part of the exhibits.

But very few well finished hogs were seen on the market this week. High priced feed probably accounts for this.

During the latter part of the week a herd of 67 hogs was visited that had been vaccinated with the double treatment on January 10. Other than being a little sore, the hogs showed no ill effects from the treatment.

On Saturday a farmers' meeting at Morril was attended for the purpose of assisting in making definite arrangements for the farmers' short course to be held there February 13 to 16.

The week ending February 3 was given over almost exclusively to the vaccination of hogs, both in infected and non-infected herds. Outbreaks of cholera were found in four herds. A total of 73 hogs were vaccinated in infected herds, and 211 were vaccinated in non-infected herds. Virus was used in all herds vaccinated.

Twenty-three requests for service were received and 15 farm visits were made.

Two pure bred hog sales will be held on the Project during the month of February, one on the farm of M. L. Keisel, who will sell 33 bred Poland China sows and gilts, and the other on the farm of T. T. Evans, who will sell 30 bred Duroc-Jersey sows and gilts.

D. H. Propps, the dairy division representative in this State, has offered to spend some time on the Project during the month of February in the interest of the dairy business.

The hog shipments from the Valley have been somewhat reduced during the last few weeks on account of a shortage of cars. Last week no shipments were made on account of car shortage.

Corn is selling for $1.78 per cwt., shorts, $1.80; butterfat, 35 cents per pound.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley.

With the exception of one and one-half days, the entire week ending February 3 was spent in the office. The coldest weather of the year was experienced during the wee, the thermometer registering 40 degrees below zero on one day.

A trip was made to Billings and the station agents on the Project were visited for the purpose of obtaining data in regard to the amount of butterfat shipped from the Project during the past month.

There was a [marked] increased in the amount of butterfat shipped from Project stations during the month of January. The total shipments are estimated at 8,000 pounds, at an average price of 41 cents. The interest in dairying is keen and conditions seem favorable for a big growth in the industry during the present year. The cheese factory at Ballantine is doing remarkably well. It is reported that about 2,500 pounds of milk is received every other day and that the price paid for butterfat in December was 56 cents per pound.

Twenty-five cows were added to those under test during the month. Although there have been no recent importations of dairy cattle, the demand is good and a few carloads of good cows could be disposed of readily.

Truckee-Carson.

During the week ending January 27, four days were spent in Reno attending the annual Farmers' Week program, at the University of Nevada. One entire day of the convention was devoted to dairying.

The program included discussion of dairying, swine production and range improvement. Because of the very unfavorable winter weather that has prevailed,throughout the state for the past three weeks the attendance was not as large as on previous occasions.

On Wednesday of the week ending February 3, a cooperative shipment of one car of hogs was consigned to the Nevada Packing Company, at Reno, which is now owned by the Western Meat Company, of San Francisco. Since this change of management, prices have materially increased at Reno. They propose to pay ½¢ per pound under the San Francisco quotations. The saving in freight charges and shrinkage will easily amount to the ½¢ different in price. Ten cents per pound was received from the prime hogs in the last shipment to Reno, and 8-3/8 ¢ was received for the hogs weighing under 150 pounds.

The farmers in this locality are very reluctant about finishing hogs for market, because of the very high price of grain. The Western

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

Meat Company, at Reno, realizing the effect this condition will have on its pork supply, has proposed to buy all the stock hogs available here and place them on feed here. Six to eight cents has been mentioned as the probable price for stock hogs. The sentiment for hog raising has had a material set back during this fall and winter. Large number of brood sows, some of them heavy with pig, have been sent to market, the owners being willing to suffer dockage rather than risk another season with such high prices of grain. Since much of the grain land will be planted to sugar beets, the supply of grain for next fall will probably be smaller than the past year.

Uncompahgre.

During the week ending February 10, 10 farm visits were made, conferences were held with 18 other farmers, and 8 requests for service were received.

A hog feeding test was started on Wednesday in which 59 shoats are being fed for a period of 45 days. A request was received for a test of another lot of hogs which will be weighed soon.

Tuesday was spent at the Annual Water Users' meeting at Olathe. There were 400 farmers present at the meeting and 12 conferences were held during the day on silos, dairying, and hog feeding.

The cheese factory at Delta is paying 40 cents for butterfat and the creamery at Montrose, 32 cents. Corn is being bought in carlots at $2.13 per cwt. This is the cheapest hog feed at present as wheat is too expensive and barley cannot be found.

Minidoka.

During the week ending January 27, the Project was visited by Mr. Hochbaum, State Leader of County Agents. Visits were made and meetings held to discuss the possibility and advisability of having a county agent in Minidoka County this year. The sentiment was found to be very favorable. A soils and crop specialist, to work in cooperation with this office, is desired.

The present movement is in response to a movement undertaken by the farmers on their own iniative. Petitions were circulated and then sent to the University. This started among the farmers of the Rupert and Pioneer districts with the understanding that it would not overlap or interfere with the present demonstration work and that the assistance of the Office of Demonstrations on Reclamation Projects would not be withdrawn from them because they had a county agent.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka (continued).

Lines of work suggested by the farmers for this man are farm gardens, varieties of grain, soil and irrigation problems, weed control and seed production. A possible danger is that they are expecting too much.

Boise.

A hog feeding test was begun during the week ending January 20 with Wm. Teick, in which 30 head of pure bred or high grade Poland China hogs will be fed out on ground barley with possibly some supplemental feeds.

High prices of grain have made hog feeding unpopular and the number of hogs on the Project has decreased by over 9,000 head as compared with 1915. Results of two sales of pure bred Poland Chinas, held recently, however, indicate that there is still strong interest in hogs and the decrease in numbers may not be detrimental to the industry.

A sale at Roswell a few weeks ago resulted in an average price of $33.85 for about 40 head of bred sows and gilts while 33 head, most of which were gilts, brought an average of $43.65 at Wilson Brothers' sale at Greenleaf this week. The top sow at the latter sale brought $92.50, while several gilts brought $80.00 per head. The sales were especially gratifying in the appreciation shown for stock of good breeding and individual merit.

At the Wilson Brothers' sale a program had been arranged including stock judging demonstrations, talks on dairy subjects, etc., and following the sale an illustrated talk was given at the Greenleaf Academy. Two other meetings were held in connection with County Agent Williams, of Ada County, during the week.

Dairy-herd records were started with two men and two other herds were tested.

Tieton.

During the week ending February 3, 4 farms were visited, 3 calls for assistance were received, and 4 office conferences were held. The greater part of the week was spent in preparing lectures, in working with farmers who are interested in the organization of a cooperative association for the manufacture of cheese and in studying the details and legal provisions for such an association.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

At a meeting held at Harwood on Monday, 23 farmers who own cows expressed a desire to secure a cooperative cheese factory. A number of farmers who are not milking cows at present volunteered their assistance, and a number who could not be present are known to favor the proposed organization. A committee of three farmers was appointed by the chairman of the meeting with which this office will cooperate in canvassing the territory which will be served by the proposed factory to secure signatures and stock subscriptions to a provisional cooperative agreement. Another meeting will be held as soon as the canvass is completed, at which definite action will be taken. The Reclamation Service is cooperating by offering the legal advice of its attorney.

At a recent conference with a state college extension man it was suggested that Warden Henry Dunn, of the State Penitentiary, at Walla Walla, be requested to describe a home-made hog oiler which he has used on the penitentiary farm with good success during the past two years. The following is quoted from Mr. Dunn's reply:

"Ours were made from iron pipe, one about three and a half or four inches in diameter, and the other about eight inches in diameter. The smaller one is used for the pigs and shoats, and the larger one for the brood sows and fat hogs. They are moved from pen to pen as desired. Ours are from five to six feet long, but any length may be used which will not afford too much spring by the pressure of the hogs against the rollers.

"The ends of the pipe are plugged with wooden plugs. The plugged pipe is then mounted on an iron pipe through holes in the plugs so that the small pipe serves as an axis of the larger one. The axis extends several inches through each end of the cylinder and rests upon bearings upon which it revolves.

"We use a 'V' shaped wooden trough to contain the crude oil. The ends of the trough, all of which is made of two-inch material, extend slightly higher than the sides. The large pipe is then placed to revolve in the trough by fitting the axis into the end pieces of the trough either in holes or notches covered to hold the axis in place.

"We bevel off the outer edge of the upper sides of the side pieces of the trough leaving a rather sharp edge of the side next to the roller. This allows the pigs a better chance to rub against the roller.

"-----the roller could be made of wood by inserting dowel pins

Tieton (continued).

in the ends or turning the ends down to form the axis. It makes a better job to let the axis run entirely through the iron pipe than to attempt using dowel pins in the wooden plugs in the ends of the pipe.

"-----but if further description is desired I will have a photograph taken. The 'V' shaped trough does not hold a large amount of oil and the pipe roller cannot dip up all of the oil from the bottom of the trough. It might be desirable to make the oil container of a shape to increase the capacity of the oil contained or the availability of this oil to the roller.

"About one-half of the rollers are exposed above the edges of the troughs in the oilers which we are using."

The local creameries are again paying 42 cents per lb. for butter fat. Good steers are quoted at $7.50 to $8 per cwt., prime hogs at $10.50 per cwt., and good cows at $6 per cwt. Sales of alfalfa hay during the week were below the prices paid during the first part of January, the present price being from $10 to $12 per ton baled. The potato market is rather uncertain, market quotations being $40 to $43 per ton but higher prices having been paid for first class potatoes.

Production and Feed Cost of Milk and Butter-Fat.

A statement has been prepared showing the production and the cost of feed consumed by 43 cows on the Tieton Project during full-year testing periods completed prior to December 31, 1916. The 43 cows were owned in 9 different herds. They were fed alfalfa hay, which usually was supplemented, at least a part of the time, with some other feed. The feeds used during the period of test in the 9 herds are named below, together with the valuation placed on each. The figures show the valuations per ton, except for pasture, for which the figures show the valuations per month per cow:

Alfalfa hay, ...	$7 to $10
Corn silage and corn soilage,.....	$4
Corn fodder, ...	$2
Bran, ...	$26.60
Ground barley, ...	$30 to $35
Ground corn, ...	$20 to $24

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Tieton (continued).

Dried Beet pulp, ...$27 to $28
Carrots, ...$4 to $6
Corn stalks and cull potatoes, ...$4
Pasture, ...$0.50 to $1.00

Not all these feeds were used in any one herd, but they were involved in various combinations in the feeding of the 43 cows included in the report.

The table below is a condensed summary of the figures submitted by Mr. Bean:

Per cow	Highest	Lowest	Range	Average
Milk Production, Lbs., ...	9584	2981	6559	5702
Butter-fat production, Lbs., ...	321	128	193	239
Value of butter-fat at 29.5 cents, ...	$94.69	$37.76	$56.83	$70.50
Cost of feed, total, ...	$47.74	$22.50	$25.24	$40.10
Cost of feed per lb. butter-fat, cents.	33.0	6.4	26.6	17.0

The figures in the three columns headed "Highest", "Lowest", and "Range", are not vertically comparable, except for those showing butter-fat production and butter-fat value; that is, the cow producing the most milk did not produce the most butter-fat, nor consume the most feed. All the figures in the "Average" column, however, are vertically comparable.

The table shows the wide differences among these 43 cows, and indicates something of the extreme variations in efficiency found among cows used for dairy purposes. The column headed "Range" gives a measure of the variations in the case of the cows included in the report. The range in milk production--6559 pounds--was equal to 132 per cent. of the average milk production; that in butter-fat production was 80 per cent. of the average, and that in the feed cost per pound of butter-fat was 158 per cent. of the average.

Of the 43 cows, 7 produced more than 300 pounds of butter-fat; 12 produced between 250 and 300 pounds; 16 produced 200 to 250 pounds, and 8 produced less than 200 pounds of butter-fat, the lowest production being 128 pounds. It is believed that these 43 cows are approximately representative of the dairy cows throughout the Project, although they may be somewhat better than the average.

The data, of which the above is merely a brief summary, will be of value chiefly for local use in encouraging dairy herd improvement and better methods of feeding and management. But the figures

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

are of general interest in that they indicate in a general way the feed cost of butter-fat production on the Tieton Project and add to the evidence of the need for increasing dairying efficiency on irrigated lands.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Scottsbluff.

During the week ending February 10, the weather was rather mild, the minimum temperature being 6 degrees above zero. There was considerable wind during part of the week, and no precipitation.

All of the variety corn was husked and hauled in. The hay purchased from Scriven Bros. was hauled to the farm. An effort was made to purchase additional hay, but it was found to be very scarce. One farmer who has some hay to sell asks $15 a ton in the stack.

The sheep feeding experiment will end next week, and it is planned to ship 240 of these sheep on the 16th. The hogs and cattle seem to be doing very well.

San Antonio.

During the week ending February 10, the maximum temperature was 76; minimum temperature, 25; greatest daily range, 39; precipitation, .45 inch. Fairly warm weather prevailed throughout the greater part of the week.

Considerable labor was utilized in digging holes in the root rot experiment. On account of the hard dry subsoil, a great deal of powder was used in blasting. More seed was planted in the garden, and tomato plants were potted in the greenhouse. Some machinery was repaired as time allowed. About two days dragging was required to restore the soil mulch on the plats and in the orchards after the rain. Results of the heavy freeze of last week were noticeable. The flax was nearly all frozen to the ground and the oats were badly set back. Pruning of grapes and orchards is going forward as rapidly as possible.

Mr. A. A. Bryan, of the Office of Corn Investigations, arrived at the station on Friday, to take charge of the corn plantings.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

The week ending February 3 was devoted almost entirely to meetings, several of which have been all-day sessions. At four places "County Life Institutes", under the auspices of a number of country churches, have been held. Both attendance and interest at these meetings were good. Attendance at all meetings has varied from 10 to 120; the largest attendance came when the lantern slides from this office were the sole attraction. Wherever they are used they meet with a very good response.

The Avalon Orchard Company, of Kuna, has just completed official tests for advanced registration of three of their Holstein cows. Two four-year old cows made nearly 19 lbs. of butter fat each, and a heifer, not yet two years old, made a little over 12 lbs. in 7 days.

The weather for the month has been cold, temperatures of 15 below zero having been reported, but there have been no storms, and stock has not suffered. Dairymen say their production has held up remarkably well considering the cold.

Meetings have occupied most of the month, one week having been spent away from the Project in attendance at the conventions of the State livestock associations. The work done towards the organization of a sheep grazing association for the purpose of running ranch sheep on the Boise National Forest range has not brought results, not enough grazing permits having been issued to justify any further attempt to effect an organization. Bands of sheep on the Project are too small, too widely scattered, or the sheep are too well bred for owners, generally, to take much interest in the matter.

The ninth month's report of the cow testing association has just been made. The 406 cows on test made an average for the month of 26.67 lbs. of butterfat. The highest cow produced 62.9 lbs., and the highest herd averaged 37.56 lbs. This herd, which belongs to Lee & Son, also holds the high record for 9 months, the 13 cows, 6 of which are 2-year-olds, having produced an average of 258.8 lbs. of fat in the 9 months' period,

A case of suspected cholera occurred on Deer Flat during the week ending February 10, the second hog dying within a week. The case was not diagnosed, but it is not believed to be cholera.

Mr. Weick's hogs, which were weighed on January 15, were sold this week and weighed on February 8. Thirty-five head gained 988 lbs. in 23 days, from 2700 lbs. ground barley, 1190 lbs. corn, 24 lbs. hay, and 66 lbs. tankage. The cost of feed, with barley @ $1.75

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

per cwt., corn at $2.25 cwt., tankage at $3.00 cwt., and hay at $10 per ton, was $80.40, including cost of grinding feed. The hogs sold at 8¢ per lb., which gave a net loss of $1.36. The hogs were not finished, which accounts for the relatively low price.

The grazing association which was partially organized in December met on Monday and perfected the organization. Twenty-four men holding permits for approximately 500 head of cattle paid the membership fee. A meeting of the Advisory Board was called for February 12.

The Boise Valley Jersey Association held its third meeting at the farm of J. S. Stinson, of Nampa, on Tuesday. There were 17 men present, not all of whom are cattle breeders, however. The association now has 13 members who are breeders.

Huntley.

Twelve farm visits were made during the week ending February 10. One trip was made to Billings to confer with members of the Farmers' Cooperative Equity Society in regard to securing speakers for farmers' meetings that are to be held on the Project soon.

Seven farmers have recently expressed themselves as being desirous of building silos next summer and have sought information from this office in regard to cost and desirability of the different types.

Truckee-Carson.

During the week ending February 10, there were received 36 calls for assistance, and 19 farmers were visited in response to requests. Much of the time during the past week has been devoted to the demonstration of treatments of cases of impaction, milk fever, and stricture in cows' udders.

It is expected that there will be no cooperative shipment of hogs this month, as hogs suitable for marketing are very scarce locally, and very few hogs are now being fattened on the farms. Many of the hogs that were expected to be put on feed and to be sold cooperatively have been disposed of as stock hogs to the Nevada Packing Co., of Reno, Nevada. The Nevada Packing Co. is assembling these hogs near Fallon, and will finish them for market. Eight cents is being paid for good stock hogs.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre.

Four illustrated lectures were given at meetings held during the week ending February 17. The total attendance at the meetings was 130.

Dr. Miller, of Delta, recently returned from Wisconsin, where he purchased 38 pure bred Holstein heifers and a bull for his farm near Delta, a point off the Project. He reports a heavy demand for dairy cattle in the southern part of Wisconsin, and the prices paid range higher than was asked a year ago for the same class of animals.

Several carloads of potatoes were marketed during the week at a price of $3.65 per cwt. One carload on onions was shipped from Olathe at $12 per cwt. Butterfat is bringing 34 cents at the creamery and 40 cents at the cheese factory.

Nine farm visits were made during the week, and 12 calls for services were received.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio.

During the week ending February 24, the maximum temperature was 90; minimum temperature, 42; greatest daily range, 45. Signs of spring became very evident. Fruit trees began to bloom and leaves to come forth. The weather was warm and rain is badly needed.

The oats pasture was so backward that the steers had to be taken off. Corn was planted on the following plats: A4-3, 8; A6-7, 9, 11, 13, 15, 17; B5-1, 2, 13, 15; B6-1, 3, 5, 7, 9, 11, 13, 15, 17. All of the early corn planted by Mr. Bryan was destroyed by larks before it came up. One man is now on constant patrol duty with a shotgun. His work begins at daylight and ends at dark. The lawns are being cleaned up and trees mulched and watered.

Umatilla.

During the week ending February 17, the maximum temperature was 55; minimum temperature, 29; precipitation, .51 inch.

Numerous small and unsuccessful trees were removed from the nursery and manure applied to the land to prepare it for planting other stock. The canefruits, field B4, were pruned and the brush removed. The brush was removed from the vineyard B5 and burned.

A meeting was attended at the Columbia school to assist in outlining a plan of procedure for the farmers in developing a more substantial truck industry, and to plan the present year's work in truck gardening.

The office files were cleared of periodicals and reports that accumulated during the past year.

No outside work of consequence has been done during the month of January and the first half of February, but the correspondence and other office work has been kept up. During this period a great deal of time has been spent in assisting in the final steps of perfecting the bee-keepers' association, and in assisting the fruit growers to frame up an organization.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

Three days of the week ending February 3 were spent in the office on report, correspondence and general office work; one day attending committee meetings; and two days in the field. The roads were drifted so badly that necessary farm visits were made with great difficulty. In the districts where the schools are centralized it was impossible for the school wagons to get in for 4 days.

The week ending February 10 was spent in answering requests, helping secure pre bred livestock, and in arranging for an advertising meetings.

The interest in pure bred stock constantly grows better. So far it has been possible to secure in southern Idaho most of that desired. In one case a buyer was sent to Iowa but the results were unsatisfactory. Present indications are that it may again be necessary to send out of the State for a shipment of pure bred livestock. Beef cattle and sheep are especially difficult to secure at the present time.

Wool buyers are in the field offering from 35 to 39 cents for the spring clip. One large outfit near Marshfield contracted their clip of 9,000 fleeces at 35 cents. All others, both the farm and range sheepmen, are holding for prices ranging from 40 to 45 cents.

Tieton.

Twenty-one farms were visited during the week ending February 10, 12 calls for assistance were answered, and 5 office conferences were held with farmers.

A Water Users' meeting was attended at the Willow Lawn school on the evening of the 5th. The cooperative cheese factory proposition at Harwood was discussed in addition to matters pertaining to water delivery during the coming season.

On the afternoons and evenings of the 7th, 8th and 9th, a series of farmers' meetings were held at the Cowichee school house. Mr. Jamison, Dairy Field Agent for Eastern Washington, and Mr. Hobson, of the State College, were secured to assist in the meetings. The principal interest was in dairy topics and in the farm loan act. The Cowichee Improvement Club has taken steps to organize

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

a local farm loan association.

An all-day community picnic meeting was held at the Tieton school on the 10th. This is the first meeting under the recently organized Tieton Improvement Club. Topics for discussion were the Farm Loan Act, Business Methods in Dairying and Opportunities for Cooperation, by Hobson, Jamison and Bean. The matter of making a campaign to secure tonnage for the extension of the Northern Pacific from the lower Cowichee Valley to Tieton City was also discussed.

The frost is leaving the ground rapidly, and 2 farmers began plowing this week, one working on alfalfa sod, and the other on sage brush land. The ground is extremely dry and will be difficult to handle unless there is more rain before spring plowing begins.

The prices of potatoes is continually rising, quite a tonnage having moved this week at from $55 to $60 per ton. Alfalfa hay has gone down in price during the last few weeks and several sales were made this week at $9 per ton baled. There seem to be very few potatoes in the pits but there is considerable baled hay still in the fields.

Due principally to the bad condition of the roads and weather conditions, only one day was spent on the Project during the week ending February 17. The committee of farmers appointed to canvass the territory of the proposed cheese factory met to discuss progrees and problems. Mr. Hobson, of the Washington State College, who had spent two years in studying the cheese and butter markets and conditions in Wisconsin, attended the meeting and discussed some of the problems which Wisconsin cheese and butter makers had met.

The Ahtanum-Tide Hollow Cow Testing Association has completed its first month's work. The secretary of the association, having had similar experience with associations in Wisconsin, tested during the first half of the month until the regular tester could be released from his work at Pullman. The association is evidently well started and the members are enthusiastic. It is anticipated that there will be good reason to add more herds to the work and divide the present association into two sometime during the year.

Market prices for farm produce on the local market are as follows: potatoes, $60 to $65 per ton; alfalfa hay, baled, $9 to $12 per ton; corn, dry, on cob, $27 to $28 per ton; oats, $33 to $34 per ton; barley, $35 per ton; butterfat, on the farm, 40 cents per lb.; hogs, fat, 200-250 lbs., $11.50 per cwt.; hogs, fat, 175 to 200 lbs., $11 per cwt.; prime steers, $7.50 to $8 per cwt.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Truckee-Carson.

During the week ending February 17, there were received 31 calls for assistance, and 13 farms were visited.

As a result of the efforts of the Nevada Packing Co. to purchase stock hogs in the Valley for feeding, their local buyer has purchased 300 in the past 10 days, which are now being fed near Fallon. The buyer said that he offered to sell the ranchers corn at $43 per ton, so that they might fatten their own hogs, but in every instance they preferred to sell them as stock hogs.

Two dairymen during the week asked for assistance in selecting Holstein herd bulls. In compliance with these requests, letters of inquiry were sent to breeders of registered Holstein cattle on the coast. Only bulls from cattle with high official records are considered in making selections. A large number of bulls have been imported into the Valley by this method.

Huntley.

PRODUCTION AND FEED COST OF MILK AND BUTTER-FAT.

There is given below a summary of a report on the production and cost of feed consumed by 60 cows on the Huntley project during full-year testing periods completed prior to February 1, 1917. These 60 cows are owned in 8 different herds. The feeds involved in the feeding of these herds were alfalfa hay, sugar beets, sugar beet syrup, corn fodder, beet tops, and pasture. The feeds used varied in the different herds, but all the cows received alfalfa hay as the principal feed. In the few instances when beet tops replaced alfalfa hay for short periods their value was assumed to be the same as if the cows had received the usual quantity of alfalfa hay. The uniform values placed on the feeds used are stated below:

Alfalfa hay, per ton,	$8.00
Sugar beets, per ton,	5.00
Sugar beet syrup, per ton,	16.00
Corn fodder, per ton,	3.00
Pasture, per month per cow,	1.00

The butter-fat produced was given a uniform valuation of 30 cents a pound.

The table below is a condensed summary of the figures submitted

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley (continued).

by Mr. Christopher in his report on these 60 cows. It is interesting to compare these figures with those in the Weekly Bulletin for February17, showing the results secured with 43 cows on the Tieton Project.

Per cow	Highest	Lowest	Range	Average
Milk production, lbs., ...	10,682	2468	8214	5560
Butter-fat production, lbs., ...	399	107	292	226
Butter-fat test, per cent., ...	6.43	3.20	3.23	4.00
Value of butter-fat at 30¢	$120.00	$32.00	$ 88.00	$67.60
Cost of feed, total, ...	$ 44.32	$21.83	$ 22.49	$34.50
Cost of feed per lb. butter-fat, cents, .	30.6	8.8	21.8	15.3

Of the 60 cows, 9 produced more than 300 pounds of butter-fat; 11 produced between 250 and 300 pounds; 17 produced between 200 and 250 pounds; and 23 produced less than 200 pounds, the lowest being 107 pounds.

APPOINTMENT OF COLLABORATING CLERKS.

The Chief Clerk of the Bureau has announced that hereafter a request for the appointment of a Collaborating Clerk must show the following, in addition to the information usually given:

1-As nearly as possible how much time the appointee will devote to our work each month.

2-Whether the appointee will perform service for any one else while he is on our rolls; and if so,

3-That compensation he will receive for such service.

The field men will please include the information above indicated in any requests made for the appointment of collaborating clerks.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending February 10, the following temperatures were recorded: Maximum, 77; minimum, 32; greatest daily range, 42.

Fallow plats D-18 to 23 and E-1 were disked. Clearing was continued on D and E. Leveling was begun on D-41 to 45.

The grapes, dates and deciduous orchard are being pruned. Pomegranate, fig and grape cuttings were prepared for distribution among the settlers. Cotton stalks on C-44 and 45 were cut and removed and the plats plowed.

During the week ending February 24, the following temperatures were recorded: Maximum, 80; minimum, 33; greatest daily range, 34. Thirty-two acres were irrigated.

Leveling with two 4-horse teams was continued on the D series. Borders were repaired on C-6-7-19 and 20. Fallo plats B-19-20-39-to 41, C-25-26 and 45 were disked. Prunings were hauled from the deciduous orchard, and A-18 to 21, dates. The corn stalks were removed from the citrus trees; all the leaves and much new growth was frozen. Cotton is being picked on A-24.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

North Platte:

During the week ending February 10, the Scottsbluff County Fair Association held a stock-holders' meetings, at which plans were made for increasing the premiums and enlarging the fair generally.

Mr. M. L. Keisel held his annual pure bred Poland China hog sale this week. Two bred tried sows sold for $62.00 each. Nine bred spring gilts brought an average of $40.00. The top sold for $50.00. Thirty-one fall pigs sold for an average of $13.85. During the year 1916 Mr. Keisel raised and sold 50 pigs from 4 sows, the returns amounting to $1240.50. All the pigs were raised and sold within 12 months time. The returns from one sow amounted to $466.00.

A bill has recently been passed by the State legislature prohibiting hogs from having access to running streams or canals where these streams or canals furnish water for irrigation purposes. This bill was an outgrowth of the hog cholera control work on the Project. In 1914 a large number of the cholera outbreaks were brought about by hogs having access to irrigation water.

One bad outbreak of hog cholera was found during the week. This occurred in the locality where there had been no cholera for over two years. An investigation proved that the outbreak was brought about by the hogs having been placed in the Scottsbluff stock yards. The hogs were bought in Banner County. The party who sold them delivered them to the Scottsbluff stock yards where they remained over night and were fed on the ground. The next day they were reloaded and taken home. About 10 days later 3 or 4 of the hogs took sick. About 10 days after this, at the time the herd was visited, over 50 percent. of the bunch of 85 head were visibly sick. The herd was vaccinated, but it is quite probable that several of the hogs will be lost.

During the week ending February 17, the first Farmers' Short Course to be held in the Valley was held at Morrill. Four representatives from the State University, two men and two women, were the principal speakers. Separate sessions were held for men and women. The meetings lasted for 4 days. One of the men speakers spoke on live stock topics, the other on subjects pertaining to rural engineering. The women discussed domestic science and domestic art. The

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

attendance at the men's meeting was only fair, but the interest was good. The attendance at the women's meetings was better. Arrangements are being made for holding another Short Course at Morrill next year. Two days of the week were spent at these meetings at Morrill.

One herd of 14 hogs were given the double treatment for cholera during the week. One outbreak of cholera was found in a herd of 7 hogs near Gering. They were vaccinated.

One feeding test was planned on the farm of B. J. Noland. Another one was completed on the farm of Mr. Montz in which a bunch of spring pigs were finished for market, corn and alfalfa hay being the fattening ration. Five and three-fourths pounds of corn were required per pound gain.

On Monday of the week ending February 24, W. T. Evans' pure bred Duroc-Jersey bred gilt sale was attended. Thirty-three sows were sold for an average of $33.00, a very good average considering the quality of the stock. The top gilt was sold for $45.00.

Four days of the week were spent holding Farmers' Institutes. Two meetings were held in the vicinity of Bayard, one near Minatare, and one near Scottsbluff. All meetings were well attended, and interest was good. The average attendance at the day meetings was 70; at the evening meetings, 120. Two representatives from the State University assisted in the meetings. At each poin where a meeting was held they have asked for a similar meeting again next year.

Arrangements are being made for holding at least 2 dairy meetings next week, one at Scottsbluff, another at Sunflower School House, near Mitchell. Mr. D. H. Propps, of the U. S. Dairy Division, will assist in these meetings.

Three lots of fat lambs, 7 cars, shipped from the valley last week topped the Omaha market at $14.65, a record price for the Omaha market.

Butter fat is now selling for 36¢ at most points in the valley. The Scottsbluff Creamery Company is paying 38¢. This company usually pays about 2¢ above what is paid at other points in the valley

Uncompahgre.

Thirteen farms were visited during the week ending February 24, and 14 requests for service and information were received. Two

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

lots of hogs were weighed and made ready for a feeding test on corn, tankage and alfalfa. There are 128 hogs in the two lots.

An illustrated lecture was given during the week on live stock types.

On Monday, a stock sale was attended in which 147 head of range cattle were sold. There were about 50 small calves in the herd and the average price for the whole herd was $60.00, a high price for just ordinary stuff.

Buyers from the Ogden, Utah, packing plant are in the valley buying hogs. They have paid as high as $11.25 per cwt. for fat stuff at the shipping points on the Project. This, however, is a little less than could be had through the Denver market, where the prices at present are about $12.75 per cwt.

There has been an outbreak of blackleg at a point just off the Project. A visit was made to this place on Saturday with the local veterinarian who was called to look after the case. It is being found that the farmers are taking more interest in the vaccination of their calves during the last month.

Tieton.

Twenty-four farms were visited during the week ending February 24, 10 calls for assistance were answered by farm visits, milk was tested with 6 farmers, and 8 follow-up visits were made.

There is a healthy tendency on the part of several farmers who have small herds of cows and other farmers who desire to commence dairying to secure a few good grade cows. Desirable cows for sale are very scarce, which fact makes the demand for good cows only the more gratifying.

A call was received from Mr. Harris to look at a defective silo in which silage is spoiling. The silo is known as the "Tongue Lock", and is similar to the home-made "Commonsense" with the exceptions that the 2 by 4 peices are tongued and groved on the flat sides, and the octagonal hull constructed of the 2 by 4s is not lined with flooring as it is in the "Commonsense" type. The 2 by 4s are laid in an asphaltic oil. Four ft. peices of triangular cross section are nailed into the corners of the silo to do away with the sharp corners, and as they are also laid in the asphaltic , is to make the corner joints more nearly air tight. Corner boards are also nailed to the corners on the outside of the silo. Since the silo was filled it seemed to have expanded for the ends of the outer and inner corner boards are now

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

from one-quarter to three-quarters of an inch apart. The silage is spoiling in each corner by molding, and the silage in the center of the silo is not properly preserved. Another silo filled from the same corn field at practically the same time is keeping the silage in perfect condition. Mr. Harris said that a neighbor who built a "Tongue Lock" silo last summer is having the same trouble with his silage.

The prices being paid for farm produce are practically as they were last week. Potatoes are still continuing to rise in value, the latest quotation being $35 per ton. Two local range sheep men sold wool at 40 cents per lb. for good quality long wool, and 38 cents for fine wool, the highest prices ever paid in the Yakima valley.

Truckee-Carson.

During the week ending February 24, there were received 20 calls for assistance, and 5 visits were made. The work during the week was materially interfered with by high winds, which put the telephone lines of the Project out of commission.

A pig feeding test was started on one of the farms on Saturday, when 40 head of hogs were weighed. The object of this test will be to compare corn supplemented with tankage with corn supplemented with ground wheat. There may also be one lot on corn alone.

Boise.

An interesting meeting of the poultry dealers of Caldwell and a representation from Payette and Weiser was held in Caldwell during the week ending February 17. There has been much complaint from dealers on account of the low quality of eggs produced in this section, and of the common deformity of turkeys. The eggs are said to be weak and watery, which makes them unfit for storage purposes. The deformity among turkeys consists of crooked breasts which makes the birds sell for a much lower price than normal birds. The purpose [illegible] discuss the cause and possible remedy for these conditions, and the organization of poultry producers and dealers to improve the quality of poultry products. A temporary organization was formed and a meeting called for the 26th of the month.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

The Bureau of Animal Industry wool demonstration car visited the Boise Valley on February 17, making stops at Boise, Nampa and Caldwell. In addition to the demonstrations held in the car, motion pictures were shown illustrating the production and handling of wool, from the feeding of the sheep to the manufacture of finished cloth. The car had been well advertised, and the attendance was very good.

The first meeting of the Advisory Board of the cattle grazing association was held at Meridian this week, when W. J. Whitmore, of Mora, who is one of the members of the Association, was elected to take charge of the association herd this season. There were 4 applicants for the place, each of whom submitted bids. The association had voted to contract with the herder by the head in preference to the employing of a man by the month. The accepted bid was $2.25 per head for the season which is to include the salt delivered on the range under the supervision of the Advisory Board. The Association will provide any necessary feed going and coming from the range and will also pay the grazing fee which will be about 44¢ per head this year. The bids received were higher than any of the members of the Board had expected.

One meeting was held this week with Mr. Williams, County Agent of Ada County, who is organizing a County Farm Bureau after the plan of the Canyon County Farm Bureau organization. About 50 were present at this meeting though not all of them were farmers.

Meetings were attended during the week ending February 24 at Central Cove and Ustick, at which pastures and dairying were discussed.

The present tendency of cattle men toward the Shorthorn breed is assuming a serious aspect, as is usually the case when such a tendency prevails. The popularity of the breed is attended by the lack of judgment on the part of men who desire to buy stock of the breed. Dealers are taking advantage of this tendency and importing animals of very low merit which they are selling at greatly advanced prices as purebred stock. A shipment of such cattle which was inspected this week is inferior to stock which is commonly run on the range and they are being offered for prices nearly four times as high as good range stock will bring. These cattle are lacking in type and condition and are not worth to exceed $50 per head, while they are being priced at $200 or above. As far as possible breeders are being discouraged in the purchase of this kind of stock.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre.

During the week ending March 3, 20 farm visits were made and 14 requests for service and information were received.

The first part of the week was spent in arranging for the silo excursion, which was conducted on Wednesday. Sixty farmers made the trip, and 8 farms were visited to note the results of the feeding work, especially to steers. The steers on feed, although not all the best quality, showed a gain over what was noted before on the first excursion. Two farms were visited during the day to view appliances used in hog raising. The trip covered 58 miles.

A farmer was assisted in the selection of a bull for his dairy herd. Two lots of pure bred Holsteins were imported during the week. One lot of 38 head is for a farmer near Delta just off the Project. The other lot of 8 head were imported by the Loesch Bros.

Potatoes brought $4.35 per cwt. during the week, with the market a little weaker the last of the week. Butterfat is worth 35¢ at the local creamery and 40¢ at the Delta cheese factory. Hogs (tops) are bringing $13.45 at Denver.

Huntley.

Eight farm visits were made during the week ending February 24.

A report received from the president of the Ballantine Dairy Products Association shows that the Ballantine Cheese Factory did the following business from June 7 to December 31, 1916: Milk received, 254,075 pounds; cheese manufactured, 25,862 pounds; pounds of cheese per hundred pounds of milk, 9.82. The prices paid for butter fat ranged from 33 cents per pound, in June, to 56 cents per pound, in December.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

THE DEVELOPMENT OF LIVE STOCK INDUSTRIES ON THE UNCOMPAHGRE PROJECT IN 1916.

The report submitted by Mr. H. A. Lindgren on the development of live stock industries on the Uncompahgre Project in 1916 is briefly summarized below. Mr. Lindgren's work included dairying and swine production chiefly, and some work was done in connection with the beef and sheep industries. The usual state and federal cooperation was had in this work.

Dairying.

The local interest in dairying increased markedly during the year. The number of cows used for dairy purposes increased from 2,317, in 1915, to 3,025, in 1916, the increase amounting to 30 per cent. The dairy stock population of 1916 included 275 Holsteins, 493 Jerseys, 385 Shorthorns, and 2,257 animals of mixed breeding. At the close of 1916, 513 farmers were interested in dairying, as compared with 418 at the close of the previous year, the increase amounting to 22 per cent. The table below gives a comparison of the number of farmers engaged in dairying and of the herds of the sizes specified in 1915 and 1916:

Item.	1915	1916
Number of farmers interested, ...	418	513
Number of herds containing fewer than 10 cows, ..	387	461
" " " " 10 to 20 cows, ...	32	33
" " " " more than 20 cows, ...	9	14

During the year, 54 dairy animals were imported to the Project, practically all of them being of the Holstein breed. Assistance was given in connection with locating and importing these cattle.

The predominating breeds on the Project are Holsteins, Jerseys, and Shorthorns used as dairy animals. The number of cows of mixed breeding is greater than those of dairy breeds. There are on the Project at present 14 pure bred Holstein bulls and 34 pure bred Holstein females. There are no pure bred Jersey females but there are 5 pure bred Jersey bulls. During the year, one bull club of 3 members was organized and preliminary plans have been made for the organization of two others. Cow testing was carried on in 17 herds

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on Uncompahgre (continued).

and this work is becoming increasingly popular. Assistance was given to 8 farmers in connection with the selection of bulls.

The principal developments in connection with feeds and feeding during the year were an increase in the interest in silos and the establishment of additional pastures. Twenty-five farmers were given information regarding irrigated pastures during the year, and 35 regarding silos. The area of land pastured on the Project was 1,936 acres, as compared with 1,267 acres in 1915.

In the testing records carried on at 17 farms, the average milk production per cow was 4,500 pounds. Where hay alone is fed, as is a common practice, the feed-cost of producing milk averaged 60 to 75 cents per hundred pounds, and the feed-cost of producing butter-fat, 15 to 20 cents per pound. The average price paid for butter-fat during the year was 30 cents. The local creamery manufactured 75,000 pounds of butter and the local trade in butter increased materially. It is estimated that since the local creamery established a system of cream grading and began to pay higher prices, the quantity of butter manufactured on the farm has decreased about 33 per cent. A privately-owned cheese factory was established at Delta late in the year and was placed on a paying basis. This factory has paid from 5 to 13 cents more for butter-fat than the creameries have.

The dairy industry is coming to be intimately associated with a number of other industries on the Project. The utilization of much locally produced feed is accomplished in the production of beef cattle, which are grazed in the adjacent national forest during the summer. These cattle heretofore have taken care of much of the forage production of the Project. As the available range is now about fully occupied, it is probable that increased forage production will result in an increased interest in dairying. The dairy industry so far is secondary to beef production, swine production, and potato growing. There is need for improvements in breeding and equipment. The possibilities for dairying on the Project are favorable. Alfalfa and corn silage can be produced abundantly and the climatic conditions are such that expensive buildings are not necessary. It is expected that the dairy industry will experience conservative development in 1917.

The Swine Industry.

The ease with which it is possible to get started in the swine business has resulted in a great interest in swine production. This fact, together with the cooperative shipment of hogs during the past

Live Stock Industries on Uncompahgre (continued).

year, have brought about a marked improvement. At the close of 1916, there were on the Project 13,729 hogs, as compared with 10,880 at the close of 1915. Further comparisons are given in the following table:

I t e m .	1915	1916
Number of farmers owning hogs, ...	476	671
Number of hogs, ...	10,880	13,729
No. of herds containing 1 to 10 hogs, ...	327	401
" " " " 11 to 20 hogs, ...	95	111
" " " " 21 to 50 hogs, ...	92	123
" " " " 51 to 100 hogs, ...	97	44
" " " " more than 100 hogs, ..	39	18
No. of cars shipped, May to December, inc. ...	19	84

It is noticeable in the above table that there is a tendency to increase the number of small herds and to decrease the number of large ones. This change is believed to be desirable in that relatively small herds favor economic production.

Of the 13,729 hogs on the Project at the close of 1916, approximately 900 were of Berkshire breeding, 2,500 Poland China, 3,500 Duroc-Jersey and about 7,000 were of mixed breeding. The general tendency is towards the Duroc-Jersey, to which breed most of the boars belong. There was much improvement in the methods of breeding during the year, there having been a particularly good interest in the use of a better type of boars. Assistance was given in the selection of 8 boars. There is at present one herd of pure bred Duroc-Jerseys on the Project.

Alfalfa pasture is the basic ration for summer feeding and is used extensively. The general practice is to pasture hogs on alfalfa without supplements, but there is a growing interest in supplementing pasture with grain. During the year, 50 farmers cooperated with the field man with respect to swine feeding problems. The grains commonly fed are barley, wheat, and corn. Four carloads of tankage were imported and fed on the Project in 1916. Eleven feeding tests were conducted and produced valuable information for local use. One of the important features of swine feeding on the Project is the increasing use of barley, which matures early, enabling the swine growers to finish and market their hogs in advance of the marketing of corn-belt hogs.

As a rule, the farmers on the Project are using straw sheds for

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on Uncompahgre (continued).

hog houses. There were few improvements in equipment during the year, except in the matter of self-feeders, of which more than 100 were used with satisfactory results. Assistance was given in the construction of 10 portable hog houses. No serious difficulty was experienced during the year with diseases. Only 6 calls were received to investigate sickness among hogs and in each instance only minor ailments were found.

In the feeding tests conducted, the cost of production has been investigated. Where grain is valued at the normal price of one cent per pound the cost of production on alfalfa pasture, with a 2 per cent. ration of corn, was about 2.28 cents. Where grain alone was fed, the average cost was about 5.2 cents. The marketing conditions on the Project were improved through the inauguration of cooperative shipping. Sixty-three of the 84 carloads of hogs shipped from May to December, inclusive, were shipped cooperatively. The prices have been very satisfactory, except during the early part of the year. The prices ranged from $5.75 to $10.00 per hundred pounds f.o.b. Project points. The most serious difficulty encountered in marketing has been unsatisfactory railroad service, which, in some cases, resulted in heavy shrinkage, particularly with poorly finished hogs. The shrinkage obtained with well-finished hogs varied from 2 to 8 per cent. The average cost of marketing, including freight, commissions, and shrinkage, is about one dollar per hundred. Practically all the hogs are marketed in Denver.

The present conditions indicate that swine production will ultimately surpass all other industries in importance on the Project. An increasing number of farmers are coming to keep a few hogs. The practice of growing hogs in small herds is increasing and is believed to be desirable, in that it makes possible a profitable association of swine production with other industries, including potato production, fruit growing, and dairying. Important requisites for successful future development are the use of better breeding animals, improvements in marketing methods, standardization of breeds, and improved equipment and methods of feeding.

The Beef Industry.

The raising of beef animals on the Project has been developed more than any other live stock industry. The beef industry at present affords a market for approximately 50,000 tons of alfalfa hay on Project farms. Approximately 60 per cent. of the farmers are actively interested in beef production, many of them making it their

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Live Stock Industries on Uncompahgre (continued).

major business. Extensions in the industry depend chiefly upon the availability of range. There is at present a call for more grazing lands than are available. The number of beef cattle increased from 5,294, in 1915, to 7,515, in 1916, the increase amounting to about 42 per cent., and being due chiefly to increased efficiency in the range management on the Uncompahgre National Forest.

The predominating breeds are Hereford and Shorthorns. The practice of the cattlemen's association is to furnish one bull to each 30 females. The percentage of pured bred bulls is small. There is an increasing interest in finishing the beef animals on the Project and this is resulting in the erection of silos and the production of silage crops, principally corn. Some farmers have produced silage and sold it to beef feeders at from $6 to $7 per ton in the silo.

During the year 1916, there were serious outbreaks of contagious abortion on the range. This condition menaced the beef industry because of the impracticability of controlling the disease under range conditions. Larkspur poisoning also has caused some loss and there has been some blackleg. Assistance was given in connection with contagious abortion and blackleg, particularly in securing and administering vaccine in connection with the latter disease.

The major portion of the beef animals produced on the Project are marketed in Kansas City, where they are sold as feeders. Generally, the results are satisfactory, except for the slow shipping service. During the year 1916, prices for steers ranged from $6.50 to $8.75 per cwt., f.o.b. Project points.

There are on the Project two strong associations of cattlemen, one with headquarters at Delta, and the other at Montrose. These associations are accomplishing important results in the matter of cooperation with the Forest Service in range management and in procuring legislation necessary to the development of the beef industry. During the year, the matter of establishing a cooperative grazing association among small owners was investigated but the conditions did not seem to warrant the organization of such an association at this time. It is believed, however, that in the future, cooperative grazing will make it possible to increase the efficiency of the range and to make the range available to an increasing number of small farmers.

Sheep Production.

The high prices for sheep and wool stimulated considerable in-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on Uncompahgre (continued).

terest in sheep production on the Project during the year. The number of sheep owned by Project farmers in 1916 was 30,265, compared with 16,335 in 1915. In 1916, 6,850 head were brought to the Project for winter feeding. The sheep owned on the Project are owned by a small number of individuals. Forty farmers owned from 1 to 10 head; 19 from 11 to 50; 3 from 51 to 100; and 10 more than 100.

The breeds represented include Rambouillets, Lincolns, Cotswolds, Hampshires, and Oxfords. There are about 400 head of pure breds. In 1916, one farmer imported 25 pure bred Hampshire ewes and one pure bred Hampshire ram. Interest seems to be centering in Hampshiresand Lincolns. The sheep industry will probably increase in importance until it equals beef production. There is an excellent opportunity for sheep production in small flocks on the farms through the use of irrigated pastures and beet tops and other waste feeds.

WOOL PRODUCTION IN THE UNITED STATES.

In view of the present high prices for wool, the following figures, which have been compiled from the Monthly Crop Report for February, 1917, are of interest. It will be noted that the estimated production in 1916 was less than that of 1914, or of the average of the three 5-year periods ending in 1913:

Period or year	Annual Production, Millions of pounds.
1894 to 1898, 5-year average	281
1899 to 1903, " "	298
1904 to 1908, " "	299
1909 to 1913, " "	314
1914.....	290
1915.....	285
1916.....	288

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Shoshone.

During the week ending January 27, a meeting was held in this office by those interested in pasturing cattle on the forest reserve range during the coming season. Twenty-seven men were present and officers were elected. There is a great deal of dissatisfaction over the losses of last year. Some plan is desired whereby the herder will be liable for a part of the loss. The loss last year was about 7½ per cent., 35 head having died or strayed out of 457 taken to the range. Of the deaths, 11 were caused by poisonous plants, 8 by blackleg, one by lightening, and one cow died calving.

Returns were received on a cooperative shipment of two cars of cattle. Twenty-six men cooperated in the shipment, which included 58 cattle. The shipment was consigned to a firm at Omaha. Each man's cattle were given a distinctive mark and were sold separately, the expense being charged against the cattle, according to their weight in Omaha. Two of the cattle were crippled, the damage being estimated at $20.00. The owners were allowed what it was estimated the cattle would have sold for, if they had sold in good condition, and the $20 damage was charged in the expense. The shrinkage on those cattle which were weighed before shipping varied from 8 to 15 per cent. The expense was $6.37 per thousand pounds, not counting shrinkage. The expense was $5.60 for hay fed before shipping, $38.86 for feed en route, $107.62 for freight, $14.50 for yardage, 10 cents for inspection, 20 cents for insurance, $30.00 for commission, $10.50 for attendant's meals and $20.00 for damage to crippled cows. The price received for cows ranged from $6.00 to $7.40. The price of heifers ranged from $6.35 to $7.00. The price of steers ranged from $7.00 to $8.00.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Umatilla.

During the week ending February 24 additional work was done in cleaning weeds and brush from the vineyard, and also from the nursery. The asparagus bed in A2 was worked to break off the old stalks and to mix the manure, which had recently been applied, into the soil.

A hayrack was built and 500 feet of flume constructed and partly laid along the east fence in C2. The cracks in the flume were tarred with a combination of coal tar pitch and bitumen soon after the sections were nailed up.

The station correspondence has been increasing rapidly during this week. Account was kept of the correspondence, telephone calls, and visits by project farmers during the week to show the amount of attention that is of necessary being given these things. There were 31 letters written, 23 telephone calls answered pertaining to agriculture in some phase, and four visitors came to the farm seeking agricultural information.

The maximum temperature during the week was 50, minimum 19, and precipitation .38. The precipitation came in the form of snow that fell all day Saturday.

The maximum temperature during the week ending March 3 was 48, minimum 4, and precpitation 0.

Owing to the continuance of cold weather, and of the snow on the ground no outside work was done. Filing bulletins was completed and a number of miscellaneous jobs about the place were attended to.

Wednesday a meeting washeld at Hermiston for the discussion of the production of alfalfa, sweet clover, and hairy vetch seed. Mr. J. E. Larson, of the Extension Staff of the Oregon Agricultural College, discussed alfalfa and sweet clover seed production. Mr. Clarence Roberts and Mr. Jas. Winslow, local farmers, gave short talks on their experience in alfalfa and sweet clover seed growing work. The results of the work at the experiment station in producing and harvesting hairy vetch seed was briefly given by R. W. Allen. Fifty three people were in attendance and very good interest was shown in the subjects being discussed.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson.

During the week ending February 24 the maximum temperature was 60, minimum 0, and precipitation .04 inch.

During the week ending March 3 the maximum temperature was 51, minimum 15, and precipitation .07 inch.

Plats E1 and E6, and H5 and H9, were disked after the application of the manure.

Manure was hauled for the hot beds, and new earth was put in the greenhouse beds.

San Antonio.

The weather averaged warm during the week ending March 3, but wound up with rather cold weather the last few days of the week. the maximum temperature was 56, minimum 32.5, greatest daily range 38, and precipitation .09 inch.

Soil moisture work was continued. Samples were taken from plats A6-1, 2; B5-5, 6; and A4-9-10. Cabbage and tomatoes were repotted in the green house. Digging on the root rot experiment will be finished in a week or ten days with favorable weather. Mr. Bryan's corn was replanted. The farm grounds were cared for and a number of wild rose cuttings were secured. Some time was spent in cleaning to tool room and some of the farm machinery. A number of trees, shrubs, and vines have been received from the plant introduction stations of California and Florida. Several pounds of Dasheen tubers have also been received.

Mr. G. W. R. Davidson of the Office of Crop Acclimatization arrived at the station February 27.

Yuma.

During the week ending March 3, the maximum temperature was 79, minimum 32, and greatest daily range 34. Thirteen acres were irrigated.

Leveling during spare time was continued on D series. Some pruning was done on the B orchard. The pruning of berries of A10-6 was finished and brush removed. Five hundred rose cuttings representing twenty eight varieties were planted in the nursery. Cotton picking on A24 was finished and A23 is being picked. Three and one-half acres of nursery and truck plats were cultivated.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

Sixteen Duroc-Jersey pigs weighing between 50 and 60 pounds each, were bought and placed in the pasture experiment. Another load of threshed milo was hauled from Winterhaven.

Mr. J. G. Martin visited the station on Friday and Saturday. Trips were made to Somerton and Winterhaven, visiting prospective Egyptian cotton growers and parties who contemplate erecting roller gins.

NOTICE

Mr. G. A. Wood has been retransferred to the office of Western Irrigation Agriculture, assuming his duties March 16.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone.

During the week ending February 17, 3 farms were visited, 47 office calls were received, and 12 other conferences were held. A cooperative shipment was made of one car of cattle.

Returns were received on the two cars in the cooperative shipment of last week. The cattle were shipped on Wednesday and were sold in Omaha on the following Tuesday. Twelve men cooperated in the shipment, which consisted of a bull, 16 steers, 22 cows, 14 heifers and 5 calves. The total expense, not counting shrinkage, was $6.82 per thousand pounds. Only 2 cows were weighed before shipment. One of these shrank 16% and the other 17%. The bull sold for $6.75 per cwt. The steers sold for $6.75 to $8.00. The cows sold for $5.50 to $7.70. The heifers sold for $5.50 to $7.70. The calves sold for $6.75 to $7.00. The financial transactions incident to these cooperative shipments are handled by one of the local banks.

The following is the agreement drawn up and signed by the President of the Board of Directors of the Shoshone Live Stock Association and by the herder who is to herd the project cattle in the Shoshone Forest during the coming season:

"The Association agrees to deliver all cattle at the Ralston stockyards on the day set by the association, properly branded and innoculated against blackleg. After the cattle are listed and their valuation assessed by the Board of Directors of the Association, the herder agrees to assume entire responsibility for the cattle until he delivers them to the owners.

"The Association agrees to pay a herding fee of sixty cents per head per month, except that no herding fee shall be paid on bulls, on suckling calves under six months old, or on cattle which are not returned. Half of the fee for each month is to be paid at the beginning of the month, the other half being held by the Association till the cattle are returned, to cover the guarantee of the herder.

"The herder agrees to furnish and transport all salt, dispose of all cattle which die, according to the rule of the Forest Service, and stand one third of all loss on the basis of the valuation placed on the cattle by the Board of Directors of the Association."

During the week ending February 24, 2 farm visits were made, 16 office call were received, 8 other conferences were held, and 13 meetings were attended.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone, (continued).

Most of the time this week was given to the annual project farmers' institute. At Powell, Monday was devoted to beets; Tuesday to dairy and beef cattle; Wednesday to horses, hogs, and sheep; Thursday to crops, and Friday to general discussion. The entomologist for the Great Western Sugar Company, four speakers from the State Agricultural College, and Mr. Magruder furnished the program. Meetings were held at Garland on Wednesday and Thursday. The attendance was only fair, largely because of public auctions.

Boise.

A call to examine unthrifty hogs on the State Farm was received during the week ending March 3. A shote was killed for autopsy and found to have an advanced case of tuperculosis.

After an almost unbroken winter, the weather has become much warmer and frost is nearly out of the ground. Roads have been almost impassable but are beginning to dry. The ground is still too wet to plow, considerable snow having fallen during the week.

Four meetings have been attended, most of the remaining time having been spent in the office.

Truckee-Carson.

During the week ending March 3 there were received 33 calls for assistance, and 18 visits were made to farms in response to calls. Assistance was asked for on a variety of subjects, the principal ones relating to difficulties incident to calving. The distribution of Farmers' Bulletin No. 790 on "Contagious Abortion in Cattle", accompanied by a circular letter, has brought many queries on the subject the past week from the dairymen.

The pigs in the pig feeding test at Mr. Sanders place were weighed, and the results of the first week are as follows:

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

	Lot I	Lot II	Lot III
Number of pigs	14	16	11
Total net weight	1027	1484	1556
Grain:			
Ground wheat, pounds	288	393	365
Prepared hog feed, pounds . . .	141	175	202
Total grain:	429	568	567
Total cost of grain	$9.83	$13.09	$12.89
Total gain	86	112	105
Pounds grain per pound gain . . .	4.99	5.07	5.4
Cost per pound of gain	11.4¢	11.7¢	12.2¢
Percent daily gain	1.39	1.25	1.02
Proportion, wheat to hog feed, (approximately)	2 to 1	2.2to1	1.8 to 1
Value of wheat, $50 ton, hog feed, $37.50 ton.			

The above rations are the same as were being fed when the feeding test was started, so that the results represent the inefficiency of the feeding operation as conducted under these conditions. The prepared hog feed mentioned in the ration consisted of by-products of rice mills, breakfast food factories, and spice mills. The bulk of the feed was made up of the hulls of grain and seeds, and has been distributed locally as a prepared hog feed with very strong recommendations. It seems that the poor results in this feeding operation have been largely due to the fact that the prepared hog feed entering into the ration has added bulk and cost to the ration out of proportion to the digestible nutrients supplied. Tankagehas been ordered for this experiment. As soon as it arrives, the rotations for the different lots will be corn and tankage, corn and wheat, and wheat and prepared hog feed.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

THE DEVELOPMENT OF LIVE STOCK INDUSTRIES ON THE HUNTLEY PROJECT IN 1916.

The work in live stock industries on the Huntley project in 1916, as recently reported by Mr. Christopher, was devoted chiefly to dairying, which, at present, is the most important live stock industry on the project. Attention was also paid to swine production and, to a lesser extent, to the production of sheep on farms. In this work, cooperation was had with the usual state and federal agencies. The following is a brief summary of Mr. Christopher's report:

The Dairy Industry.

During the past year, more interest in dairying was manifested by project farmers than ever before. This interest resulted from the high prices obtained for dairy products; from the increasing efficiency of the dairy farmers in producing and utilizing feeds; and from the growing appreciation of the value of barnyard manure in the production of sugar beets. There has been a brisk demand for dairy cows throughout the year. The number of farmers owning dairy cattle in 1916 was 287, which was the same number of farmers reporting the year previous, but the number of dairy stock owned increased from 1,507, in 1915, to 1,753, in 1916, the increase amounting to 16 per cent. Of the 287 farmers owning dairy cattle at the close of 1916, 240 owned from 1 to 10 each; 31 from 10 to 20 head each; 12 from 20 to 30 head each, and 4 more than 30 head. About 100 head of young dairy females were imported during the year and most of these are now producers.

The predominating breed is the Holstein, and the prevailing preference is for this breed. Practically all the cows on the project are grades but nearly all bulls in service are pure breds and of fair quality. Because of the difficulties of securing high class cows by importation, it is to be expected that the quality of stock will be improved through the use of the present foundation stock of pure bred bulls. One bull club was organized during the year.

The principal feed for dairy cattle is alfalfa hay. This feed will continue to be the basis of the ration, but interest is developing in silage and in irrigated pastures. There are at present no silos on the project but there are prospects for a number to be erected in 1917. The 17 pasture tests inaugurated in the spring of 1916 produced results which have greatly stimulated the interest in irrigated pastures and it is expected that the acreage of pasture will be doubled in 1917.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Huntley.

A few farmers are trying dried beet pulp during the present winter, and it is possible that this feed will become important.

The quality of dairy animals on the project is being improved gradually through the use of good bulls. Four very good pure bred bulls were imported during the year. About 100 cows were under test, and this testing work has resulted in the elimination of some unprofitable cows. The equipment for dairy stock is inadequate but the conditions in this respect are gradually improving. A few new cow sheds were constructed during the past year. There are very few difficulties from diseases. In 1916, there were a few cases of suspected contagious abortion, but it was not possible to determine definitely that the disease was present. A few herds was tested for tuberculosis during the year by the state veterinary department but no reactors were found. There is an occasional loss from blackleg but this disease has been kept under control by vaccination.

The total value of dairy products sold from the project in 1916 was about $30,000, as compared with about $22,000 in 1915. The increase was due both to higher prices and to larger production. Creameries within a radius of 150 miles, hotels and restaurants in Billings, and a cooperative cheese factory at Ballantine, furnished the principal markets for the dairy products of the project. The prices paid for butter-fat in cream ranged from 25 to 41 cents a pound. The tendency among project dairymen towards cooperative endeavor is encouraging, particularly with reference to marketing and to securing good bulls. A cooperative cheese factory was organized at Ballantine and began operations in June. The factory has been successful from the start and has paid from 10 to 15 cents a pound more for butter-fat than any other buyers. The prices paid for butter-fat by this factory ranged from 39 cents in June to 56 cents in December. The establishment of a cheese factory at another point on the project is now under consideration.

Dairying, sugar beet production, and swine production will probably be closely associated on the project. At present, there is a sentiment in favor of a rapid increase in dairying and a reduction in swine production. The reaction away from the swine production, however, is believed to be temporary. There seems to be a tendency for the dairy farmers to plant smaller areas to sugar beets and to endeavor to produce higher yields through the use of manure produced by dairy cattle. It is believed that the dairy industry will develop rapidly

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Huntley (continued).
during the next few years. Unprofitable cows are gradually being weeded out of the herds through the use of the scales and Babcock test. Good bulls are being imported and there is a brisk demand for good cows. As the industry grows, more co-operative associations such as the Ballantine cheese factory will be organized, and this should do much to promote the development of the industry, particularly in connection with marketing problems.

The Swine Industry.

At present, the general sentiment is not favorable to the production of swine, except as a side line to the dairy industry. Many of the farmers who have engaged in the swine production have endeavored to produce too large herds and have thus been forced to but feed at high prices. However, the farmers who have kept only enough hogs to consume waste material and by-products of their dairy enterprises have made good with their swine.

The number of swine on the project on December 31, 1916, was 2,791, as compared with 4,866 on December 31, 1915, the decrease amounting to 42 per cent. The number of farmers owning hogs decreased in the same period from 301 to 254. These decreases are believed to be due to the high prices for feeds and for pork. The leading breeds of swine on the project are Duroc-Jersey and Poland China. There are but few pure breds of either breed. There is a general tendency towards the use of pure bred sires, but, as a rule, these sires are not carefully selected. The breeding methods also are inferior, it being a common practice to breed sows irregularly, so that the herds produced are not uniform and age and size.

Alfalfa pasture, sugar beets, and a little grain are the principal hog feeds. Hogs can be grown very cheaply on alfalfa pasture supplemented with a small grain ration, either wheat or corn, but there has been a tendency for farmers to endeavor to produce hogs on alfalfa pasture alone. This tendency was intensified in 1916 by the high price of grain. Five feeding tests conducted during the year indicated the importance of feeding grain on alfalfa pasture and the practicability of using hogs in utilizing waste and by-products.

At present, the swine on the project are rather inadequately housed, although there has been some improvement in housing facilities during the year. In the past, there has been a large loss of young pigs due to the inadequate housing, but it is believed that hereafter most farmers are going to raise only as many pigs as they can properly care for. The project is practically free from swine diseases and pests. Some little difficulty was experienced with lice, but this pest has been easily

Live Stock Industries on the Huntley (continued).
controlled. Cholera appeared in one herd of 65 hogs during the year, but prompt vaccination prevented loss and the spread of the disease.

Most of the hogs marketed from the project during the past year were shipped to Omaha, St. Paul or Chicago. A shipment of 175 head of 70-to-80-pound pigs were sold to a Seattle serum company. Aside from this, there were no important shipments westward. A small number of hogs were marketed in Billings. There were four cooperative shipments, including six carloads. The farmers participating in these shipments received from fifty cents to one dollar net per cwt. more than they could have obtained from local buyers. Cooperative shipping is gaining in favor. The future development of the industry depends on the adoption of methods which will facilitate an economical utilization of waste materials and by-products and on improvements in management and marketing.

The Sheep Industry.

During the year, an effort was made to learn something regarding the range conditions and requirements with reference to rams and to develop relationships between the range sheep industry and the production of sheep on project farms. The range sheepmen have difficulty in securing a sufficient number of well-bred rams, so that there is an excellent market for such rams. Project farmers desiring to go into the sheep business will probably find no difficulty in marketing all the high class pure bred rams they can produce. The Hampshire and Oxford breeds are most in demand by the rangemen. At present, one farmer on the project is breeding sheep with the object of supplying bucks to the range and it is expected that others will get into this business in the near future.

According to the census taken by the Reclamation Service, there were on the project on December 31, 1916, a total of 3,729 sheep, owned by 11 farmers, as compared with 6,198 sheep owned by 17 farmers on December 31, 1915. In addition to the sheep owned by farmers, several thousand head are being fed on the project during the present winter. Most of these sheep will be turned back to the owners about February 1. In a few instances, the farmers feeding sheep will receive $8.00 to $8.25 per cwt. for the gain they put on the sheep. In other instances the farmers sell the feed, principally alfalfa

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Huntley (continued).
hay and sugar beet tops, to the owners of the sheep and feed the sheep on their places. The prices for beet tops have been as high as $4.50 per acre, and alfalfa hay has brought $8 to $10 per ton.

It is to be expected that as the acreage in irrigated pastures on the project increases there will be an increased interest in the production of sheep on the farm.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

The week ending March 10 averaged warm and dry. The maximum temperature recorded was 80, minimum, 17, greatest daily range 34, and precipitation .01 inches.

A severe freeze the first part of the week did much damage to peaches, citranges, and plums that were in bloom. Gardens were badly damaged also, as were sweet peas. Turnips, carrots, and radishes were killed while parsnips were unhurt. We will still have much fruit if there are no furter cold spells.

The corn that was planted on all the rotations February 24 came up just after the freeze and looks very fine in spite of the continued drought. It is quite likely that Rhodes grass has suffered considerably.

Plat stakes have been placed for the season. Trees, bushes, vines, and cactus on the grounds were pruned and trimmed. More garden was planted and work on the root rot experiment continued.

Mr. Rector completed one series in the soil moisture work. The palms have been trimmed and considerable progress made in pruning in the orchards.

On account of the continued drought, the winter oats on most of the plats are deteriorating.

Growth records have been kept on three of the date palms to determine the effect of temperature on growth. Some interesting facts have been noted. During the warmest weather there was a growth of more than 2.5 c.m., while during the freeze, the growth almost stopped in less than twenty-four hours.

Yuma.

During the week ending March 10 the maximum temperature was 80, minimum 32, and greatest daily range 47.

Thirteen acres were irrigated.

Cotton picking on A-23 and leveling on D & E series was continued during the week. The leveling on D-42 to 45 is about completed. The following plots were furrowed and irrigated for planting: A14-5 for tomatoes; C-1 for pistacho and jujubees; D-22-25 and 26 for cotton.

Dates on A-25 and C - fig orchard were disked. Row plantings of Indian alfalfa on C-27 and 28 were cultivated. The undesirable numbers of C-18, seedling pomegranates, were removed.

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Yuma (continued).

The ground plantings of roses were pruned. Two hundred and eight plants, representing 83, S.P.I. selections were received during the week from Chico. These plants were set out in the nursery and in permanent orchard positions.

Mr. Waite, the County Horticultural Commissioner, was a visitor at the station.

Scottsbluff.

During the week ending March 10, the maximum temperature was 51, minimum -2, and precipitation .63 inch. The precipitation was in the form of a snow storm, which was practically the first snow since last December. A heavy wind accompanied the snow and caused it to drift very badly.

Eight hundred acres of grazing land, 6 miles north of the Experiment Farm, has, by an act of Congress, been made a part of the Farm. Plans are being made to fence this land as soon as weather conditions will permit. The fencing will perhaps be done by contract.

No outside work, except general chores, was possible.

Mr. Holden returned from Washington, D.C., on the 6th.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

During the week ending March 3, 20 farms were visited, 15 office conferences were held with farmers; 3 calls for assistance were answered by farm visits, and 2 lectures were given.

A trip was made to the Sunnyside project with 3 farmers to buy cows. The 9 high grade Holstein cows purchased have been in the Sunnyside Cow Testing Association since the 1st. of June, 1916, and were declared by the tester to be the best grade herd in the Association. They were purchased at a lump price of $900. A 3 weeks old heifer calf from a dam and grand dam of some of the cows was also purchased for $25. There were 3 two-year-olds, 4 three-year-olds, and 2 four-year-olds in the lot all bred to a pure bred bull. The herd freshened from June to November, 1916, and has an average monthly production of not less than 36 pounds and as high as 38 pounds of fat per cow per month.

The top price paid for hogs was $11.75 per cwt. up to March 3 when it went to $12. The local market reports a decided increase in the percentage of hogs received which have merited the top price. The price for butterfat remains at 40 cents for the local creameries, 42 cents for fat in cream and 47 cents for fat in whole milk at the Cowichee cheese plant. The Cowichee plant reported that, even though the local demand for cheese is unsatisfied, they were able to ship 4 tons to the Spokane market. The cheese shipped was about two weeks old.

Libbey, McNeill & Libbey are at work constructing a fruit canning plant which they will operate this season. A sufficient amount of fruit has been secured by contract. Local growers look upon the cannery as a means of stabilizing fruit prices.

During the week ending March 10, 23 farms were visited, 9 calls for assistance were answered by farm visits; 7 office conferences were held, and 2 cheese factories were visited with Mr. Chaplin of the U. S. Dairy Division.

At a meeting held at Harwood on the 10th, the committee of 3 farmers appointed at a previous meeting, announced that 38 farmers had subscribed 90 shares of $10 each to the proposed cheese factory. Twenty seven more shares were subscribed at the meeting, bringing the amount pledged to $1170. It is desired to secure $2000 to start the association. A committee of six farmers was appointed to cooperate with the old committee and to report at a meeting to be held Saturday evening, March 17. A date was selected upon which this committee with Mr. Chaplin would begin work.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

Silo building activities are beginning, five requests having been received for calls within the next month. These requests may have been the result of the activity of a patent silo agent during the past few weeks and with whom a number of farmers have placed orders by which they secure installment payments.

One of the local creameries is at this time exerting pressure upon a few farmers, whom they have assisted by loaning money with which to buy cows, to keep them from supporting the proposed cheese factory. This illustrates the undesirability of farmers borrowing money in this manner if it is possible to handle the loans otherwise. During the last few weeks local banks have taken this matter up and are now loaning money to farmers for buying cows. There is a movement started to handle all loans for cows in the Valley in this manner, and to request the state college and this office to assist in selecting the cows.

North Platte.

During the week ending March 3, two dairy meetings were held, one at Scottsbluff, the other at Shamrock School House near Mitchell. At the latter place the attendance was good, but at Scottsbluff not over 15 were present, though the meeting had been well advertised. It appears that it is almost useless to try to have a farmers meeting at Scottsbluff. Practically every effort to hold a meeting there has been a failure.

Several of the farmers in the vicinity of Mitchell are anxious to get some good dairy cows this spring and it is probable that a carload will be shipped in to supply their needs.

One bunch of 20 hogs were vaccinated with the double treatment. One case of cholera was reported in a bunch of 40 shoats. These shoats had just recently been bought and, inasmuch as some of them did not look well when bought, it is probable that they were infected at that time.

Fifteen requests for service were received during the week and thirteen farm visits were made.

During the week ending March 10, one of the heaviest snow storms of the winter occurred, making the roads practically impassable. Most of the week was spent in doing general office work. It was necessary to look after two outbreaks of cholera and to vaccinate one herd with

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte. (continued).

the double treatment. One outbreak of cholera occurred in the Sunflower district which is the second outbreak known to have occurred there for over two years. This trouble resulted from a small bunch of shoats having been bought from an infected herd.

Mr. Carl Christopher from the Huntley project arrived Saturday for the purpose of investigating some of the live stock conditions in the valley.

Three farm visits were made during the week and 13 requests for services were received.

Shoshone:

During the week ending March 3, 4 farm visits were made, 32 office calls were received, 24 other conferences were held, one newspaper article was written, and a cooperative shipment of one car of cattle was made.

Returns were received on a car of cattle shipped to Omaha last week. Ten farmers cooperated in the shipment, which consisted of 4 bulls, 10 steers, 9 cows, 2 heifers, and 2 calves. The bulls sold for $7.60, the steers for $5.75 to $8.00, the cows for $7.00 to $8.10, the heifers for $7.00 to $7.25, and the calves for $5.50 to $6.00. The total expense of shipping, not counting shrinkage was $7.59 per thousand pounds. The cattle were loaded Wednesday and arrived in Omaha the following Wednesday in poor shape. The shrinkage varied from 11% to 17%.

A sale of Holstein cattle was attended and a club of four farmers was assisted in selecting a bull.

Some attention was given to arranging for grass pasture tests for the herding of project cattle on the Forest Reserve Range.

During the week ending March 10, 2 farm visits were made and 32 office calls were received.

Most of the time was given to the grazing association, grass pasture tests and cattle shipping. It is likely there will be little more shipping of cattle till fall.

An article was written for the local papers regarding hog house construction.

A talk on pig clubs was given at a meeting of the Parents and Teachers Association.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre.

During the week ending March 10, 4 farm visits were made and 15 calls for assistance and information were received.

A sale of pure bred Duroc-Jersey hogs was attended and assistance given in the selection of four hogs for project farmers. The average price received for the boars was $23.28, and for the gilts $24.10. The highest price paid for gilts was $39.50.

The price of butterfat is still 35 cents at the local creamery. The owners of the Delta Cheese Factory are considering the matter of establishing another factory at Olathe. The Delta factory is receiving 1800 pounds of milk daily at present.

Four carloads of hogs were sent to Denver on Tuesday on the cooperative shipment plan. The market at Denver is near the 15 cent mark.

Boise.

A snow storm, 48 hours in duration, occurred on Friday and Saturday of the week ending March 10. Nine inches of snow fell in Boise. The roads which were just beginning to permit travel will be impassable again. A few farmers were beginning to plow but all farm work will have to be suspended. A meeting was attempted Friday night near Meridian, but, on account of the storm, only four were present.

On Saturday the Ada County Farm Bureau organization meeting was held in Boise. Only those living on the paved road or who could come by rail could attend but the meeting was quite satisfactory from the standpoint of interest and the organization was formed. County Agent Williams has been working on the organization for several weeks.

The Jersey cattle association met in Meridian on Friday. While the storm prevented a large attendance, a good number of breeders were present.

A meeting at Huston was called for the purpose of discussing silo construction and costs. A number of silos of different kinds were built in the district last year, and several more are in prospect for this year. Two men are fattening steers on silage and hay, near Huston. If these cattle make satisfactory gains and profits as it seems probable they will, there is going to be a strong tendency toward steer feeding for next winter, for which purpose most of the silos will be built. Mr. Moreland, of Meridian, who has been fattening steers on silage and chopped hay for several years, was visited Tuesday before the Huston meeting,

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

with Mr. Cooper and Mr. Faris, the Huston feeders, Mr. Moreland is feeding 250 head of steers this winter. They are an exceptional uniform lot and are in fine condition, nearly ready for market. Mr. Moreland bought them to feed on a contract by which he is to receive a margin of 2 cents per pound above the purchase price, at shipping time. At present prices for beef he will lose about 1 cent a pound by the contract. The steers should finish close to 1250 pounds, a 300 pound gain in about 120 days. They are mostly two-year-olds, coming from ranges in the Payette Valley.

Huntley.

Four farm visits were made during the week ending March 3, and 9 cattle were vaccinated against blackleg.

The last three days of the week were devoted to farmers meetings. On Thursday and Friday a very siccessful series of meetings was held at Ballantine. Mr. I. D. O'Donnell, of the Reclamation Service, and Dr. Hartman, Mr. Hillman, and Mr. Abbey, of the State College, were the principal speakers. A small dairy and poultry show was held in connection with these meetings. There was a very good attendance of farmers at each of the meetings. On Saturday, an all day meeting was held at Wheatley school house near Osborn. All of the above mentioned speakers with the exception of Mr. Abbey helped with the meeting at Osborn, which was well attended.

During the week ending March 10, a trip was made to Denver and Sterling, Colo, and Mitchell, Nebraska, to secure information regarding the utilization of sugar factory by-products as stock feed.

At Denver, officials of the Great Western Sugar Co. were interviewed in regard to sugar beet pulp feeding and at Sterling the actual feeding operations were examined and the feeders in charge consulted. Other parties at Sterling who are feeding or have fed beet pulp were also interviewed.

A very interesting experiment is being carried on at Sterling by the Haley-Harris Cattle Co. This company is feeding 9 different carload lots of cattle in 9 different ways with beet pulp either wet or dried as the principal

Huntley (continued).

part of the ration. The object of the experiment is to discover the most satisfactory and most economical way in which to feed the by-products from the sugar beet factory. Arrangements were made with this company to obtain the results and a complete history of this experiment when completed, and a report will be submitted when received. The experiment is being very carefully conducted. The cattle were very carefully selected so that there was the smallest possible variation in weight and quality of the animals in the different lots. A careful record is kept of all feed eaten, and the cattle are weighed every 15 days and gains noted. Weather conditions and temperature changes are made a part of each days record. All of the cattle are now on full feed and appear to be doing well.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

THE DEVELOPMENT OF LIVE STOCK INDUSTRIES ON THE SHOSHONE PROJECT IN 1916.

During the year 1916, live stock industries on the Shoshone project were unstable. The fluctuations in the prices of feeds and of live stock products, the greatly increased interest in the new sugar beet industry, and the changes in land ownership all contributed to this condition. The field work, as in 1915, was devoted chiefly to dairying and swine production, with some attention being paid to beef production and sheep raising. The usual Federal and state cooperation was had in this work. The following is a brief summary of the report made by Mr. Magruder:

The Dairy Industry.

A reaction away from dairying was noted. This reaction appears to have been due largely to the labor requirements of sugar beet production, which have caused some farmers to limit, and a few to discontinue, their dairying activities. The Reclamation Service census which was made in November showed a total of 1,627 head of dairy cattle on the project, which number was 118 less than the corresponding number for 1915. At the close of 1916, there were 339 farmers owning dairy cattle. Of these, 242 reported 1 to 5 head; 72, from 6 to 10 head; 19, from 11 to 20 head; and 6 more than 20 head. The stock importations during the year were inconsiderable.

There are on the project about 35 registered Holstein cattle and a few registered Jerseys, and a number of each breed which are almost pure bred. There are known to be 2 pure bred Jersey bulls, 9 pure bred and 4 grade Holstein bulls, and 6 grade Shorthorn bulls in use by dairymen. The exact number of producing cows of the different breeds is not definitely known, but it is probable that Shorthorns and Holsteins are about equal in number, with a much smaller number of Jerseys. There has been noted a tendency for the farmers to favor Shorthorns, due largely to the present high prices for beef. On the other hand, there is an increasing tendency to use registered bulls.

Alfalfa hay is the principal feed, very few cows on the project receiving anything else. Corn silage is being fed this winter on five farms with very satisfactory results. During the season of 1916, 18 farmers cooperated in the planting of grass pastures and at least eleven of these plantings were successful. The interest in pastures is increasing.

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes.

Live Stock Industries on Shoshone (continued).

There is a decided tendency toward herd improvement on the part of individual farmers, but it is doubtful if the quality of the dairy stock on the project as a whole is improving. The lack of general improvement in this connection results chiefly from the fact that a large number of farmers sell out before they make any progress in herd improvement. It is encouraging to note, however, that a number of the more progressive farmers are actively interested in herd improvement and are paying special attention to cow testing and to securing improved bulls. Very little was done in 1916 in the improvement of dairying equipment. A few small, temporary barns were built, but the provision of high class equipment comes slowly because of the instability of dairying on the project and lack of capital. No serious difficulties were experienced during the year with diseases. There were a few cases of abortion and considerable attention was paid to combating this disease.

During the year, the local creamery sold about 82,000 pounds of butter and purchased from the farmers about $25,000 worth of butterfat. About $9,800 worth of butterfat was shipped out. The cost of production in 1916 was higher than in the previous year because of the higher feed prices. It is estimated that it cost at least $40 to feed a cow in 1916. At this feed cost, an average production of 200 pounds of butterfat per cow would make the feed-cost per pound of butterfat 20 cents. The price of butterfat ranged from 25 cents, in July, to 37 cents, in December. There is an increasing tendency for the farmers to ship their cream because of somewhat higher prices paid by outside buyers. This practice, by reducing the cream supply at the local creamery, results in relatively high cost of creamery operation. During the year, much attention was paid to the development of the cooperative spirit, with particular reference to supporting the local creamery.

While there seems at present to be a tendency for the dairy industry to decrease in importance, this condition is regarded as temporary. There are no obstacles to the development of dairying on the Shoshone project which are not commonly found in other dairying sections, and it is to be expected that the dairy industry will ultimately be very important here. (It is interesting to compare the sentiment regarding dairying and sugar beet production on the Shoshone with that on the Huntley, as reported on page 89 of the Weekly Bulletin for March 17.)

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Shoshone (continued).

The Beef Industry.

Prices for beef during 1916 resulted in increased interest in beef production. The number of beef cattle reported to the Reclamation Service in November was 376 head, or 274 more than were reported the previous year. It is probable that some cattle reported in 1916 as beef cattle were reported as dairy cattle in 1915. At the close of 1916, a total of 118 farmers were actively interested in beef production. Of these, 78 owned from 1 to 5 head of beef cattle each; 23 owned from 6 to 10 head; 8 owned from 11 to 20 head, and 9 owned more than 20 head each. There are known to be only 3 head of pure bred beef animals on the project, one a registered Shorthorn bull and 2 Shorthorn heifers. The breeds used in beef production are grade Herefords and grade Shorthorns. Alfalfa, beet tops, and straw are the principal winter feeds and the beef cattle are grazed during the summer season in the Shoshone National Forest or on the public domain surrounding the project. On some farms, beef cattle are kept to consume beet tops, straw, and alfalfa stubble. On others, the size of the herd is limited by the quantity of hay produced. It seems probable that, as the sugar beet industry develops, an increasing number of beef cattle will be used to consume the beet tops.

The principal cooperative feature of the beef industry on the project is cooperative grazing. During 1916, the cooperative herd contained 457 head, which were grazed in the Shoshone National Forest from June 15 to October 15. The results last year were not entirely satisfactory. The losses from death and straying amounted to 7½ per cent, and many of the cattle did not make satisfactory gains. The range conditions were not as good in 1916 as they ordinarily are. At the close of the grazing season, member of the grazing association did not feel encouraged over the prospects for cooperative grazing. Later in the year, however, plans for 1917 were considered and the prospects are that a cooperative herd will again be grazed in 1917. The proper utilization of the available range by cooperative grazing requires the working out of improved stock handling methods and this, of course, will require some time.

Late in the year, work was inaugurated looking towards cooperative marketing of beef cattle and avery good beginning was made. One carload of cattle was shipped to Omaha, 9 farmers cooperating in the shipment, which contained 30 head. The prices received were satisfactory and the total

Live Stock Industries on the Shoshone (continued).
shipping and marketing expenses amounted to 82.4 cents per 100 pounds. These expenses for the carload were itemized as follows: freight, $106.13; feed, $47.50; terminal charges, 25 cents; yardage, $7.50; inspection, 5 cents; insurance, 10 cents; commission, $15.00, and expenses of man in charge of shipment, $42.94. There are now excellent prospects that cooperative shipping will become the general practice in 1917.

The Swine Industry.

Almost every farmer on the Shoshone project keeps a few hogs. The dairyman keeps hogs to consume skim milk, and the grain grower keeps them to harvest waste grain. A number of farmers having large acreage of soft wheat market all of it through hogs. Practically all the large herds of swine are owned by these farmers. In November, 1916, there were on the project, 3,367 hogs, as compared with 5,767 in 1915. The decrease in number was due largely to the extensive marketing of hogs as stockers because of high prices for stockers and feed. In spite of these heavy shipments, however, a good supply of breeding stock is being carried over.

At the close of the year, hogs were reported from 232 farms, of which 161 carried from 1 to 10 hogs; 32 farms carried 11 to 20 hogs each; 27 from 21 to 40; 9 from 41 to 100, and 3 farms carried from 100 to 200 hogs. A few registered hogs were imported during the year. There are on the project pure breds of the Duroc Jersey, Poland China, and Hampshire breeds, but the number of each is not known. Most of the boars in use are pure bred and many of them are registered. The general breed preferenc is for the Duroc-Jersey. The majority of farmers breed only for spring litters but a number of them produce two litters per year. There is much need for improvement in breeding stock used and much attention is being given to this feature of the industry.

The principal feeds used are alfalfa and wheat, but many of the farmers feed also skim milk, oats, barley, beets and beet tops. There is a tendency toward heavier feeding of grain and quicker finishing, and this tendency is being encouraged. During the year, much interest developed in improved equipment, particularly shelter, and a great deal of improvement was made in this direction. Very little trouble was experienced with diseases. Some hairless pigs were born and there was some difficulty with rheumatism. No cholera appeared during the year.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Shoshone (continued).

There were not as many fall pigs in 1916 as in 1915, because of the high prices of feed. The feed cost per pound of gain was about 7 cents in the fall of 1916. The price of hogs was such as to return a small profit over this cost of feeding but many farmers feared that the price for hogs would not be maintained. Practically all fat hogs are marketed in Denver. Stockers are usually shipped into Eastern Nebraska. Most of the hogs are sold to outside buyers, but there is a growing interest in cooperative shipping. During the year, a total of 68 carload shipments were made. The prices received f.o.b. project points were $8.00 per hundred pounds or less.

The Sheep Industry.

Much interest is manifested in sheep production as a result of the high prices for mutton and wool and because sheep are proving useful in the utilization of waste feeds. At the close of 1916, there were on the project 1,645 sheep, 689 more than were reported in 1915. There is a growing sentiment in favor of small flocks of farm sheep. In 1916, a total of 49 farmers reported sheep. Of these farmers, 29 reported 1 to 10 head; 9 reported 11 to 30 each; 5 reported 31 to 100; 3 from 100 to 200, and 3 more than 200. Practically all sheep now on the project are breeding ewes. At present the breed preference is for Hampshire, although there is some sentiment in favor of Cotswolds. Naturally, as the sheep industry is in its infancy here, there is little well defined opinion regarding breeding.

No range is used by project sheep producers. The sheep are pastured on alfalfa during the summer, with but little difficulty from bloat. During the winter, the sheep are pastured on alfalfa stubble, wheat stubble, and beet tops, and are fed hay and straw. There have been no serious difficulties with diseases. The cost of production has been low, because of the fact that sheep have been used almost exclusively in the utilization of waste material. The local butchers so far have furnished a market for practically all the mutton produced. Wool usually is shipped in cooperation with large sheep ranchers near the project. There probably will soon develop a need for cooperative shipment of mutton and wool.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Shoshone (continued).

NUMERICAL STATEMENT.

The following is a statement of the principal items of work performed during the year:

Farm visits	508
Letters written	236
Circular letters	2
Newspaper articles	39
Meetings held	24
Attendance at meetings	2927
Dairy herd production tests made	74
Milk samples tested	460
Hog-feeding tests conducted	12
Consultations and Communications regarding:	
Dairy industry	946
Swine industry	258
Beef industry	163
Sheep industry	20
Miscellaneous	158
Carloads of hogs shipped	68
Carloads of cattle shipped	10
Carloads of baled alfalfa shipped	53
Carloads of alfalfa meal shipped	249
Price of alfalfa hay in the stack, per ton	$6.50 to $15.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

SELF-FEEDERS FOR FATTENING SWINE.

Under the above title, the Missouri Experiment Station has published Bulletin 144, which reports the results of 5 experiments, in which self-feeding was compared with hand-feeding as a method of finishing hogs. These experiments involved a total of 13 different lots, including 172 different hogs. The following are the author's conclusions:

"(1) Fattening hogs fed with a self-feeder gain more rapidly than when hand-fed in the usual manner.

"(2) There is no difference in the economy of gain which can be accredited to the method of feeding. This statement applies only to theamount of feed necessary to produce a given amount of pork. If the self-feeder decreases the amount of labor involved, then it would be a factor in cheapening the cost of production.

"(3) When each feed is placed in a separate feeder the hogs will choose the different feeds, so that the gains will be both rapid and relatively economical. This will perhaps be true only when each feed is supplied in abundance. For example, if the feeds used were corn and tankage and the self-feeder containing corn was allowed to become empty the hogs would no doubt eat more tankage than it would be profitable to feed them.

" It is apparent that the advantage which the self-feeder method will have in any specific instance over hand-feeding, in regard to rate of gain, will depend to a large degree upon the ability of the person doing the hand-feeding to feed so that the hogs will consume a maximum amount of feed. In practically all cases, when the self-fed hogs gained more rapidly than those which were hand-fed, they also consumed more feed.

" In a similar manner the relative efficiency of the self-fed ration, and the same feeds hand-fed, will depend upon the ability of the feeder to properly combine the feeds used.

"While the work carried on gives little basis for comparison, it is the author's opinion that self-feeders are more practical for well-grown stock hogs, that is, shotes which have grown large frames but are thin, than for pigs weighing from 50 to 75 pounds.

"Attention is called to the fact that publication deals only with the use of self-feeders for fattening swine, that is, hogs which are on a full feed of grain."

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Self-Feeders for Fattening Swine (continued).

The bulletin gives directions for building two types of self-feeder. Copies of the bulletin probably can be secured by application to the Director of the Experiment Station, Columbia, Mo.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

The week ending March 17 continued fairly warm and very dry. The maximum temperature was 90, minimum 43, greatest daily range 33, and precipitation .02 inches.

Winter oats are deteriorating and will make no crop unless we get rain soon. The corn on most of the plats looks fine. It is now so far advanced that birds can no longer injure it, and there is sufficient moisture in the ground to carry the crop a long time yet.

Considerable labor was used improving the grounds and making repairs to the buildings. More garden was planted. A number of fruit trees secured from Chico and Brooksville were set out in orchards A1, B3 and D3. Disking was done in one or two of the orchards to prepare a deeper mulch. Dead trees are being removed from the orchards as time permits. Some hoeing was done on plats B4 and B5. Some cotton and more corn was planted.

The freeze of March 5 was so severe that it appears as if most of the pomegranates were killed to the ground.

Scottsbluff.

During the week ending March 17 the maximum temperature was 30, minimum 1, and precipitation .33 inch. On Monday about 4 inches and on Thursday about 2 inches of snow fell. A very heavy wind on Friday drifted and piled up the snow very badly. Along the willow hedge west of the buildings the snow is piled four feet high.

The north room of the office building is being lathed. As soon as lathing is completed this room will be plastered. The mess house is being painted on the inside. The mess will begin about the 20th.

Truckee-Carson.

During the week ending March 10 the maximum temperature was 58, minimum 16, and precipitation .03 inch.

During the week ending March 17 the maximum temperature was 54, minimum 13, and precipitation 0.

Plats E1 and E6 were plowed previous to leveling.

The following plats were leveled and harrowed: E1, E2, E3, E4, E5, E6, F5, F6, F8, F9, F11 and F12.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson (continued).

A number of drain boxes and irrigation boxes were repaired, and some new ones were installed. A part of the irrigation and drainage ditches were cleaned. All the alfalfa plats on the farm were harrowed with the spring tooth harrow. The varieties of seed wheat were cleaned ready for seeding.

Plats B5 and B6 were manured.

Arrangements were made for a turkey pasture experiment to be conducted under the supervision of Mr. Cline. One acre of alfalfa pasture will be provided, and 4 acre of greasewood range.

A cooperative experiment with field corn was arranged to be conducted on the farm of T. V. Connor. Two acres of Australian White Flint corn will be planted. Yields will be determined and seed selection made.

A two-acre plat of pasture grasses will be planted on the farm of S. B. Pray at Fernley. After the grasses are established, the carrying capacity with dairy cows will be determined.

A potato variety test will again be conducted on the farm of Edmund Dietz.

Four varieties of onions were planted March 12, on the farm of E. S. Funk. The planting was made in duplicate. Fertilizer consisting of equal quantities of gypsum and acid phosphate applied at about 250 pounds per acre, was applied to half the plats.

Arrangements were made for the planting of the wheat and barley varieties on the Harmon-Austin farm near Stillwater. Twelve acre will be planted to wheat, and eight acres to barley. One and a half acres of peas and wheat will be on the same farm for a hogging-off test in the fall.

Yuma.

During the week ending March 17 the maximum temperature was 72, minimum 30, and greatest daily range 40.

Thirteen acre were irrigated.

The last of the cotton on A23 was picked. Leveling was continued on E series Cotton and sorghum stalks were cut on A24. Fallow plats D18 and 19 were disked. Egyptian cotton was planted on D18-19-22-25-26. Two acres of nursery plats were cultivated.

The deciduous orchard and A-17, dates, were plowed. Road plantings and A25, dates, were pruned. Twenty varieties of figs were received from the Plant Introduction Gardens at Chico, California.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Yuma. (continued).

Much Egyptian cotton was planted during the week by the settlers. On account of the continuous frosty nights, some plantings are being held back and cotton planted two weeks ago lies dormant or just sprouting. The nights are unusally cold and the spring very backward. Alfalfa is growing slowly.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

In order to learn the sentiment towards the organization of a Farm Bureau and the employment of a County Agent in Minidoka County, meetings were held at central points on the North Side during the week ending February 17. Due mostly to the fact that the meetings had not been well advertised, the attendance was far below that which is usual in these districts. The sentiment, as a whole, was quite favorable. The main objection is that, as the tax levy has been made for this year, the money would have to be taken from another fund, probably the road fund. However, over half of the required membership of the Farm Bureau (250) has been secured by the members of the local committees.

The wool car of the Department of Agriculture stopped in Burley on Wednesday. In the afternoon moving pictures of the sheep industry were shown. As this had been well advertised by posters all over the project, newspaper notices and a circular mailed to all farms where sheep are kept, the attendance was very good, exceeding 400. Preliminary work towards the organization of a lamb and wool marketing organization was done at this time.

The week ending February 24 was spent in assembling data from the U. S. R. S. surveys, answering requests and attending meetings.

In spite of the unfavorable year, the crop returns in 1916 were good. With the exception of hogs, the live stock showed a satisfactory increase.

The main crops grown in 1916 with the averages and returns per acre are shown in the following table:

Crop	Acres	Value	Average	Average Value
Alfalfa hay	37304	$1248374	3.3 Ton	$ 33.10
Alfalfa seed	754	20991	4.5 Bu.	27.35
Clover hay	880	24547	2.7 Ton	27.22
Clover seed	1702	67359	4.7 Bu.	40.68
Barley	2615	60501	26.8 "	27.80
Oats	6265	102094	27.0 "	16.20
Wheat.....	11028	269501	21.4 "	24.95
Beets.....	6360	407820	11.2 Ton	64.08
Potatoes.....	1827	414522	162.0 Bu.	146.32
Miscellaneous.....	12627	184723		
Total.....		$2800432	Average...	$ 34.38
Orchard, young alfalfa, etc.....	8538			
Total cropped....	89900			

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka, (continued).

Number of farms: North Side 1252
South Side 686
Total... 1938.

	South Side	North Side	Total	Value	Increase Percent
Horses.....	2587	4587	7174	$790412	+ 9.5
Mules.....	35	111	146	20175	+ 10.6
Dairy cattle	2676	4638	7314	366581	+ 5.9
Beef cattle	372	1932	2304	32813	+ 88.8
Hogs.....	11679	11931	23610	147221	- 46.2
Sheep.....	6590	14439	21029	158313	+ 24.0

The week ending March 3 was spent on reports and general office work and in answering requests.

Three pure bred Shorthorns were selected and brought to the project, the prices being as follows: bull, $250; cow, with heifer calf at side, $300. The Shorthorn herd of H. H. Schilman of Filer was topped. The demand here is mostly for the beef Shorthorns.

Some complaints of young lambs scouring when only a few days old are being received. The trouble seems to be due to the too heavy feeding of the ewes just before and immediately after lambing. A teaspoonful of castor oil to the affected lambs is overcoming the trouble.

Because of the high prices now being paid for market hogs (11 cents) the interest in the swine growing industry is better than at any time since last June. Grade brood sows due to farrow in March or April are selling at from $30 to $35.

Ordinary cows are selling at from $40 to $60, while good grade cows are bringing from $70 to $110. Light horses are selling at from $50 to $80, while draft breed stock is bringing from $140 to $250. Ewes of the crossed and mixed breeding of the range, with lambs at their sides, are selling at an average of $17. Butter-fat is 36 cents. Hay in the stack has dropped from $12.50 to $10.00 with the supply exceeding the demand.

Tieton.

Seventeen farms were visited during the week ending March 17, four calls for assistance were answered and 18 office conferences were held. Three meetings were attended; at the Cottonwood school to emphasize the value of the proposed cheese factory; at the Wenas school with Mr. Chaplin of the Dairy Division and at which a short talk was given on home made silos;

Tieton (continued).

and at Harwood at which the Harwood Cooperative Dairy Association was organized to operate a cheese factory.

A trip was made to the Sunnyside project to see three herds of dairy cattle reported for sale. The price asked for one herd of 9 grade cows was $1100. A herd of 80 cows are for sale, a majority of which are desirable appearing grade Holsteins, and the prices range near $100 each. Mr. H. C. Davis of Granger is disposing of his entire herd of pure bred Holsteins except the herd bulls. This herd contains some of the best animals in the West and will be auctioned. The prices asked for grade cows are still advancing and the demand is good.

The most important development of the week was the organization of the cooperative cheese factory association at Harwood. The association has a membership of about 45 herds containing over 200 cows, and this membership will be increased in both respects within the month. Officers were elected, by-laws were adopted and business of a general nature was considered. The directors will proceed to select one of the sites offered without cost, to secure bids on construction of factory and on equipment and supplies. Mr . Chaplin, of the Dairy Division, has worked in this territory for 10 days in the interest of this organization and plans to be of further assistance in disposing of the problems which are now under consideration.

North Platte.

More snow fell during the fore part of the week ending March 17 causing the snow to drift and making the roads impassable. Most of the week was spent doing general office work. Two herds of 52 hogs were vaccinated, the double treatment given in both cases. One herd was supposed to be infected with cholera at time of vaccination though no high temperatures were found.

Some complaints are being made by farmers that are loosing a large per cent of their new born pigs that have been farrowed since the bad weather started. It is possible that a little better care for a few days following farrowing time the losses could have been considerably reduced.

Corn is now selling for about $1.90 per cwt. Shorts, $1.95 per cwt.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley.

On Saturday of the week ending March 17, twenty nine two-year-old Holstein heifers and one pure bred Holstein bull were imported to the project from Monticello, Wisconsin, by Mr. Vanpelt and Mr. McIntyre of Ballantine. These heifers will nearly all be fresh in a short time and their milk will be sold to the Ballantine cheese factory. This makes about 100 cows that have been imported to the cheese factory territory since the factory started operations on June 7, last year. The success of the factory seems now to be assured.

Truckee-Carson.

For the week ending March 17, there were received 27 calls for assistance, and twelve farms were visited upon request.

This has been the first week this spring that the frost has been out of the ground sufficient for the farmers to plow to any extent. Tractors have been working on several places day and night.

Some time has been devoted to assisting in selection of bulls for dairymen. One Holstein bull was ordered from California, and other orders are pending.

Several inquiries were received concerning cooperative shipping of hogs. There seems to be sufficient hogs now ready to make up a car. When arrangements have been made, if local buyers offer sufficient inducement in the way of prices, the hogs may be sold locally. If not, they will be shipped out cooperatively. Cooperative shipping, so far, seems to have given much the best satisfaction of any method of selling.

Uncompahgre.

A greater part of the week ending March 17 was spent in assisting in the work of the Community Welfare Conference, at Delta and Montrose. An exhibit of milk in relation to health was shown at Montrose and three lectures on clean methods about the dairy were given at Montrose and Delta.

Six farms were visited during the week and conferences were held with 11 other farmers. Requests for service and information were received from six farmers.

Several cases of blackleg were reported. The vaccination is being handled by the local veterinarian. Many of the farmers are having their calves vaccinated.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

Several requests have been received from hog raisers for the organization of a hog growers' association, for the purpose of assisting in the problems of marketing the hogs and in the improvement of the breeding practices.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

THE DEVELOPMENT OF THE SWINE INDUSTRY ON THE NORTH PLATTE PROJECT IN 1916.

There is given below a summary of the report submitted by Mr. Charles S. Jones on the development of the swine industry on the North Platte project in 1916, and of his work in connection therewith. Brief notes also are given on the status of the dairy industry and the sheep industry on the project. The usual state and federal cooperation was had in the work performed during the year.

At the close of 1916, there were 1,189 farm units in operation, of which 721 were farmed by the owners and 468 by tenants. The total area of land from which crops were harvested in 1916 was 75,620 acres. There has been a steady growth in the swine industry during the past three years. This growth has included improvements in quality of stock as well as increases in number. There have been several factors, however, which have retarded development. One of these was the low prices for fat hogs during the year 1915 and the early part of 1916, as compared with prices for grain. During the latter part of 1916 the prices for pork were unusually high and interest in swine production was noticeably stimulated

Swine population.--According to the Reclamation Service survey, there were on the project in November, 1916, 25,213 hogs, as compared with 24,928 at the corresponding period of 1915. The increase indicated by these figures is slight, but it has been ascertained that shipments of swine from the valley were 28.1 per cent greater in 1916 than in 1915. In other words, the number of hogs produced on the project in 1916 as compared with 1915 very probably was greater than is indicated by the above figures. Special stock population data were secured by the Reclamation service in November, 1916, from 730 of the 1,189 farm units on the project. These 730 farm units contained 18,419, or 73 per cent of the 25,213 hogs on hand. The following table shows the distribution of the hogs on these 730 farms:

Number of farmers raising hogs.....	606
Per cent of farmers raising hogs.....	81.6
Number of farms having fewer than 11 hogs each...	273
" " " " 11 to 20 hogs each.....	110
" " " " 21 to 50 " "	108
" " " " 51 to 100 " "	76
" " " " more than 100 hogs.....	9
Largest number of hogs on any one farm.....	500

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Swine Industry on the North Platte (continued).

There was a notable reduction in the number of large herds during the year. It was found that the density of swine population was greatest in the district known as Dutch Flatts. This district is included in range 57, which range at the close of 1916 contained 4 times as many hogs as any other equal area on the project.

Breeds and breeding.-- The development of interest in better breeding stock in 1916 was marked and some very good pure bred hogs were shipped into the project for breeding purposes. The importations included both Duroc-Jerseys and Poland Chinas. Five head of pure bred Hampshires were also brought to the project, but the use of this breed is not encouraged. The following table contains information regarding breeds of hogs on the project:

Number of farmers having Duroc-Jersey hogs.....	422
Total number of Duroc-Jersey hogs reported.....	13759
Number of farmers having Poland China hogs.....	177
Total number of Poland China hogs reported.....	4666
Number of farmers having other breeds of hogs.....	7
Number of farmers raising pure bred hogs.....	104
Duroc Jerseys.....	69
Poland China.....	35
Largest number of pure bred hogs raised on one farm.....	225

The predominence of the Duroc-Jersey and Poland China breeds greatly facilitated the securing of satisfactory breeding stock. Attention was given to the dissemination of information regarding breeding stock available and satisfactory results were secured, breeding stock having been obtained in the valley by a number of farmers who formerly had imported their stock from eastern Nebraska. During the fall of 1916, the demand for pure bred boars was greater than the supply. It is probable that the improvement made in the quality of hogs was greater in 1916 than during any previous year. But few grade boars are now in use, whereas two years ago the use of grade and scrub boars was common. Special attention is being paid to selection for production and color uniformity and the results are becoming apparent in the pigs produced.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Swine Industry on the North Platte (continued).

Feeds and feeding.--The prices per hundredweight for commercial hog feeds during 1916 were approximately as follows:

Corn.....	$1.18 to $1.85
Barley.....	$1.00 to $1.80
Shorts.....	$1.33 to $1.85
Bran.....	$1.30 to $1.60

More attention was paid to swine feeding and feeding tests than to any other line of work during the year except hog cholera, and great improvement has been made in the feeding methods pursued. Very few farmers now attempt to produce hogs on alfalfa pasture without grain. A common practice now is to feed approximately a 2 per cent ration of grain as a supplement to alfalfa pasture. During the year, 25 hog feeding tests were completed. These tests included a variety of conditions and feeds, but most of them were concerned with the production of hogs on alfalfa pasture and various grain supplements. The grain rations used in these tests varied in quantity from 1.75 to 3 per cent. In the feeding of shotes, it required about 275 pounds of grain to produce 100 pounds of gain on alfalfa pasture. It was noted also, that as the grain ration was increased more grain was required per hundred pounds of gain. In the feeding of older hogs on alfalfa pasture it was found that about 450 pounds of grain was required to produce 100 pounds of gain. This feeding test work was very popular, there having been more calls for tests than could be complied with on account of lack of time. Corn is the chief grain fed to hogs, but a considerable quantity of barley is fed also. During 1916, the price of barley was rather high as compared to corn for hog feeding, and the same may be said of wheat, of which very little was fed. The practice of feeding shorts, especially to young pigs, is becoming popular. Some tankage was fed, with good results, but as a rule it is questionable if it pays to feed tankage under ordinary farm conditions. Sugar beets and molasses are fed in considerable quantities but they are used more as a conditioner or appetizer than for any other purpose. The practice of hogging down corn continues to increase in popularity. In fact, little corn is harvested and hauled to hogs where it can be conveniently fenced and hogged down. During the year, data was secured from a 47½-acre field of rather inferior corn that was hogged. In this test, the hogs paid $30.13 per acre if the gains made were valued at $9.00 per cwt., the market price.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Swine Industry on the North Platte (continued).

Equipment.--There was a decided improvement in the equipment used in connection with swine production, particularly with reference to hog houses, sheds, fences, and watering devices. Assistance was given to 31 farmers in connection with planning and building of hog houses. It is estimated that there are now ten times as many good hog houses on the project as there were three years ago. It has been noticed that the desire for satisfactory housing facilities spreads rapidly in the neighborhood where one or two farmers provide themselves with such facilities.

Diseases and pests.--The control of hog cholera occupied more time than was devoted to any other disease or pests during the year, but some attention was paid to the control of worms, lice, mange, sore mouth and other similar ailments. During the spring months, particular attention was given to canker sore mouth in pigs, which trouble causes some loss each spring. Both iodine and potassium permanganate were used. The more satisfactory results were secured from the use of iodine, which is now recommended in all cases.

During the first seven months of 1916 only seven outbreaks of hog cholera occurred, but during the month of August 9 cases were reported. In September, the situation became worse and 35 outbreaks occurred. A total of 70 outbreaks of cholera were reported during the year. It is not definitely known what caused the spread of the disease in 1916. Blackbirds are believed to be more responsible than anything else. Very few outbreaks could be traced to irrigation water, which, in 1914, was credited with carrying infection to 33 per cent of the herds where cholera occurred. During 1916, a total of 5,910 hogs were treated for cholera in 85 herds. Subsequent data were secured from 5,421 of these hogs, of which number 711, or 13.1 per cent were lost following treatment. Approximately 50 per cent of these losses (345 head) occurred in 6 herds where the disease was well advanced at the time of vaccination. Of the outbreaks occurring in 1916, 13 per cent occurred in August; 50 per cent in September, and 13 per cent in October. In 1914, the majority of the outbreaks also occurred in these three months. The State Live Stock Sanitary Board removed the quarantine against the use of virus from the territory east of range 55 and double treatment was used in several herds. The cholera outbreaks were all confined to the eastern part of the project. It is quite probable that if the work performed in 1914-1915 has not had a very decided educational effect, the difficulties with hog cholera in 1916 would have been more serious than they were.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Swine Industry on the North Platte (continued).

Production and marketing.--During 1916, a total of 511.5 carloads of hogs were shipped from the valley. The number of carload shipments per month ranged from 21½, in October, to 63, in February, the average monthly shipment being 42.6 cars. The average prices received, f.o.b. valley points, ranged from $7.00 in January, to $10.41 per cwt. in September. The total value of hog shipments ranged from $36,571, in October, to $98,762, in July. The total value of the hogs shipped from the valley during the year was $836,093. Most of the fat hogs were shipped to the Denver market, but a few shipments of heavy hogs were sent to Omaha. A number of cars of shotes were shipped to eastern Nebraska during the early fall months as stockers, but it is doubtful if as many shotes were shipped out for this purpose in 1916 as in 1915. The great majority of hogs now sold are marketed cooperatively. In 1916, one Farmers' Union Association, at Morrill, shipped an average of one and a half carloads of fat hogs per week. This association charges the farmers 10 cents per 100 pounds for handling the hogs, and the results have been satisfactory.

Future development.-- A few farmers on the project have gone out of the swine industry during the year and a number of others have reduced the size of their herds. It is probable that the dairy industry will be much more important within the next few years than it is now and that in many instances hogs will be produced to consume skim milk on farms where no swine are now grown. It is believed that swine production will continue to be one of the most important live stock industries on the project. It is already being placed on a permanent basis on a large number of farms, especially at the west end of the project. On the eastern half of the project the industry is not so well developed nor on so permanent a basis. In many instances the farmers have been handicapped financially and are not provided with sufficient equipment, particularly houses and fences. These difficulties are being overcome gradually and it is probable that the next two or three years will bring about a great change in the eastern part of the project so that that section will be as much advanced in swine production as the western half now is. Not all of the grain fed to hogs on the project is produced locally. More attention should be paid by the farmers to the production of grain to supplement alfalfa pasture, as this will be an important requisite in the future development of the industry.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Swine Industry on the North Platte (continued).

NOTES ON DAIRYING AND SHEEP PRODUCTION.

According to the Reclamation Service survey, there were on the project at the close of 1916 a total of 3,046 milk cows, an increase of 828 head or 37.4 per cent over 1915. Of the 730 farms where a detailed live stock survey was made, 622 carried fewer than 11 milk cows; 38 had from 11 to 20; 3 from 21 to 30, and 2 more than 30. The largest number of dairy cows on any one farm is 65. Sixty-six farmers had some pure bred dairy cattle. The region north of Scottsbluff and Mitchell, ranges 55 and 56, leads in the number of dairy cattle. At the present time the predominating breeds used for dairy purposes are Shorthorns, Red Polls, Holsteins, and Jerseys, in the order named. Some Holstein cattle, mostly inferior stock, were imported to the project during the year by dealers and a few private importations of very good dairy cattle were made. During 1916, four silos were built on the project. As a rule, the equipment used in connection with dairying is very inadequate, although there are a few good dairy barns. There are some irrigated pastures and several farmers have expressed their intention of planting pastures in 1917. Most of the cream produced on the project is shipped out of the valley to creameries in central and eastern Nebraska. A stock company creamery was established at Scottsbluff during the year.

According to the Reclamation Service survey, the number of sheep raised on the project was smaller in 1916 than in 1915. The Reclamation Service reports 2,254 head for 1915 and 1,401 head for 1916. Sheep are raised on but few farms. Winter-feeding of sheep, however, is an important industry. During the past three years these feeding enterprises have placed many farmers on their feet financially and a marked improvement is noted in the equipment on farms where sheep have been fed. It is estimated that approximately 325,000 head of sheep were shipped into the valley during the fall of 1916 for feeding purposes.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Swine Industry on the North Platte (continued).

NUMERICAL STATEMENT.

The following numerical statement indicates the principal activities engaged in during the year:

Requests for service	698
Farm visits	717
Callers at office	254
Communications by letter	945
Feeding tests with swine	25
Farmers assisted in selecting livestock	88
Farm buildings planned	34
Cholera outbreaks reported	70
Herds treated for cholera	88
Hogs treated for cholera	5910
Per cent of treated hogs lost	13.1
Other treatments given, herds:	
Sore mouth	23
Worms	32
Lice	5
Miscellaneous	19
Cars of hogs shipped from the valley	511.5
Range in price received per cwt	$7.00 to $10.41
Total value of hogs shipped	$836,093
Meetings held	61
Total attendance at meetings	1523
Number of lectures given	47
Number of demonstrations made at meetings	36

WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

San Antonio.

During the week ending March 24, the maximum temperature was 89, minimum 39, and greatest daily range 39. Growing conditions continue unfavorable, due to lack of moisture. The surface soil is very dry on all cultivated fields. The total precpitation since January 1 has been on 1.27 inches. All of this came as light showers, none of which was sufficient to moisten the soil appreciably.

Dwarf milo was planted on all rotation plats on March 23 and sorghum and Sudan grass was planted on March 24. Several of the fallow fields were disked to kill weeds and to form a mulch of sufficient depth. The rotation plats were weeded. Several of the orchards were also weeded.

The effects of the freeze which occurred on March 5 continue to be more apparent. The peach crop was practically ruined, and the fruit of all plums blooming before that time was killed. All tender perennials were killed to the ground. Among these were citrus trees, figs, olives, and pomegranates. The citranges were in flower at the time of the freeze, and, while the young leaves were killed the plants themselves are alive and will put out new leaves. Many of the hardy palms were somewhat injured.

YUMA.

During the week ending March 24 the following temperatures were recorded; maximum 82, minimum 33, and greatest daily range 48.

Eighteen acres were irrigated.

The ginning of last season's cotton crop is in progress. Five bales have been ginned. Cotton stalks were cut and removed from A23 and 24. The plats were plowed and disked in preparation for cotton plantings. A16, dates, were plowed and harrowed, also A17, dates, and deciduous orchard, were harrowed. Pecans on F1; dates on C43 and grapes on A15-6 were disked. Plats D14, flax; C18, pomegranates; C42, dates, and 9 nursery plats were cultivated. Numerous small plats were hoed. Green peas are being picked from garden variety plat. Eight varieties for a yield test were planted.

Messrs. Scofield, Cook and Jansen visited the station on Friday. Robert Martin and Wofford Camp arrived during the week and will assist with cotton plantings.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

APPOINTMENTS.

Requests for appointments of carpenters, bricklayers, plasterers, etc., should state specifically where the proposed work is to be applied - that is, upon a barn, a house, etc., and whether it is new construction or repair work.

Requests for the appointment of women should include information as to whether they are married or single, in order that the title "Miss" or "Mrs." may be included in the appointment.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

SHOSHONE.

During the week ending March 17, three farm visits were made, 36 office calls were received and one meeting was attended.

A meeting of the Shoshone Live Stock Association was held in this office, the Supervisor of the Shoshone National Forest being present. Only about 10 farmers were present. The Supervisor reported that applications had been made for grazing permits for only 139 head. This was quite a disappointment, as it was believed that most of the men who had been sending to the Forest Reserve Range would send again this year, even thoug there was much dissatisfaction with last year's results. Just now, the herder is planning to take even this small herd. If the Forest Reserve Range proves satisfactory this year, and the range surrounding the project proves unsatisfactory, it is likely that next year a good herd will be sent to the Forest Reserve Range.

Arrangements are being made for a cooperative shipment of another car of cattle. It is probable that this will be the last cooperative shipment till fall, since the cattle can soon go on the range and the butchers will soon be doing more killing.

Grass pasture tests are receiving considerable attention.

During the week ending March 24, 1 farm visit was made, 29 office calls were received, and 20 cattle were innoculated for blackleg for 4 men.

A cooperative shipment of one car of cattle was made this week. Nineteen men cooperated in the shipment of 27 head.

Two men who have been assisted in locating a bull purchased one this week from the Iowana Farm. Of the bull's sire, the first three daughters to freshen averaged 470 pounds of butter-fat during their first lactation periods. The sire had also been champion at the National Dairy Show. The cost of the bull is $100 and freight.

Alfalfa hay sold here this week for $20 per ton, baled and loaded on the car.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

HUNTLEY.

Twelve farm visits were made during the week ending March 24, and 43 milk samples were collected from farms and tested for butterfat. Arrangements were made to put two more herds on test. A request was received for assistance in locating a pure bred Holstein bull. The bull has been located and will probably be purchased and imported to the project in a week or two.

NORTH PLATTE.

The roads continued to be next to impassable during the week ending March 24, making it impossible to do much field work. On Monay a meeting of the County Agents of Western Nebraska at Alliance was attended. On Wednesday a bunch of 65 hogs near Bayard was given the double treatment for cholera. They were near where an outbreak of cholera occured a few weeks ago. Four farms were visited during the week and 13 requests for service were received.

One lot of fat lambs shipped out of the valley last week and on the market the fore part of this week sold for $15.25 per cwt. The highest price received thus far for sheep shipped from the valley.

TIETON.

Twenty one farms were visited during the week ending March 24, 6 calls for assistance were answered by farm visits, 14 office conferences were held with farmers and two and one half days were spent in the office at work on reports and plans for the cooperative cheese factory.

Ninety five cattle were vaccinated on five farms against blackleg and one demonstration was given in the preparation and use of the vaccine.

The newly organized cooperative cheese factory is making satisfactory progress. The five men elected as the board of directors have held meetings in addition to having spent some time in selling more stock. One of of the sites offered at Harwood free of charge has been accepted and work has begun on preparing specifications for the building by one of the directors who is an ex-contractor. Bids are received for equipment and the order is about to be placed.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

TIETON (continued).

The local buyers are offering $13.75 for top hogs at the end of the week, an advance of 75 cents per cwt. Butterfat is selling at 38 cents on the farm to local creameries with the usual 7 cents advance for the Cowichee cheese factory.

A small percentage of farmers have begun to work the land, but the weather remains to unsettled to permit of much progress. There is a marked scarcity of green both in the fields and on the range and local sheep men are deploring the lateness of their early ranges. Some hay has moved to Montana at $15 per ton in face of the scarcity in some feeding centers. It is authentically reported that a Sunnyside farmer sold silage to sheepmen for as high as $10 per ton for a limited quantity, illustrating the popularity of silage as a sheep feed in the absence of grass.

Mr. Clemens, in the Wenas valley, who has a market milk trade, is raising calves successfully with a minimum of whole milk. It is his policy to feed whole milk for 3 or 4 weeks at the rate of 8 to 10 pounds per calf, per day. The milk is then diluted "half and half" with skim milk for one week. The calves are coaxed to eat dried beet pulp as early as possible and some begin at 2 weeks. At the end of the milk feeding period mentioned the calves are fed entirely on dried beet pulp, alfalfa hay and water. The pulp is fed twice daily at the rate of from 2 to 3 pounds per calf. Alfalfa hay is fed ad libitum. The calves are in fairly good condition, and those off milk are free from scours.

TRUCKEE-CARSON.

For the week ending March 24, there were received 46 calls for assistance and 16 farms were visited.

On Thursday and Friday evenings meetings were held at the Harmon School House and the Union School. Dr Lockett, of the Extension Division of the University of Nevada, made a talk and led in the discussion on the subject of contagious abortion at each of these meetings. While the attendance was not large, those who came were especially interested, and the discussions were very much to the point. The total attendance of the two meetings was 44.

Considerable time during the week was spent with Dr.Lockett in taking blood samples for abortion testing, and assisting with some tuberculin testing work. It is possible that some experimental work on the immunization of dairy cattle against contagious abortion will be conducted on the project

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

TRUCKEE-CARSON.

before long by the University of Nevada.

Assistance was given in the selection of one registered Holstein bull to be imported from California. Pedigrees were also secured for two other parties interested in the purchase of herd bulls.

Although alfalfa hay is selling locally for $16 a ton baled, the interest in dairying has not suffered. The dairymen are considering means of increasing the efficiency of their herds sufficient to offset increased feed costs.

UNCOMPAHGRE.

Nine farm visits were made during the week ending March 24 and 8 calls for service and information were received. Two lectures were given, one at a meeting of farmers and the other to a class in agriculture at the Delta High School.

Monday was spent in attendance at a sale of Holstein heifers at Delta. The heifers were small springers and sold at prices which were high. The range in prices paid was $60 to $125 per head, the average being $85.

The weather has not warmed up enough for the beginning of spring work, so that it is quite late for plowing. There was a snow storm on Thursday, and the temperature fell to 5 degrees on Friday morning.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

THE DEVELOPMENT OF LIVE STOCK INDUSTRIES ON THE BOISE PROJECT IN 1916.

The following summary of a report submitted by Mr. H.A. Ireland covers the more important features of the development of live stock industries on the Boise project in 1916 and of Mr. Ireland's work in connection with this development. The work included dairying, swine production, beef production and the farm sheep industry. The usual state and federal cooperation was had in this work.

DAIRYING.

The prevailing sentiment towards the dairy industry did not change materially during the year, if the usual changes among individual farmers be excepted. Feed prices were much higher than in previous years, giving rise to a somewhat general opinion that dairying could not be made profitable while these prices prevailed, and a wave of sentiment in favor of beef production was noted. These factors turned some people away from the dairyindustry, but, on the other hand, the high prices for dairy products attracted others to the industry.

According to the Reclamation Service reports, there were on 1,727 farms in 1915, 6,768 dairy cattle, as compared with 8,700 on 1,950 farms in 1916. These figures indicate an average increase of slightly less than one head per farm during the year. The distribution of the dairy stock on the project in 1916 is indicated below:

Number of farms reported.....	1,950
Number of farms reporting dairy cows.....	1,249
Number of farms having 1 to 10 cows.....	1,171
Number of farms having 10 to 20 cows.....	67
Number of farms having 20 to 30 cows.....	8
Number of farms having more than 30 cows.....	3
Average number of cows per farm, on 1,249 farms	7

No important importations or exportations were made during the year.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Boise (continued).

The following table shows the number of pure breds and grades of the breeds used for dairy purposes in 1916 on 1,046 farms:

Predominating breed	No. of Farms	Number of Pure Breds		No. Grade Bulls	Number of Farms using sires	
		Male	Female		Pure Bred	Grade
Jersey..	621	229	47	13	207	162
Holstein-Freisian..	193	91	29	14	172	55
Guernsey.....	13	1	1	1	1	1
Red Polled.....	19	2	6	2	27	8
Shorthorn.....	200	21	28	15	134	100
Ayrshire.....	...	...	...	...	1	...
Hereford.....	...	...	...	...	6	...
Totals.....	1046	344	111	45	548	326

The data show a relatively large proportion of Jerseys. Similar data for 1915 are not available, but it is believed that there was a material increase in the number of farms where Shorthorn cattle were used for dairy purposes in 1916. There is need for more good bulls and for more consistent breeding methods. It has been ascertained that a large percentage of breeders use bulls of different breeds as a result of the fact that only a small number of dairymen own bulls, the majority depending on hired service. A special effort was made during the year to encourage the use of better bulls and mature bulls of proved merit where they can be secured, and to discourage indiscriminate mixing and crossing of breeds.

No special changes with reference to feeds and feeding occurred during the year. The interest in irrigated pastures continues to be very strong. Root crops are gradually gaining in popularity but are not yet extensively used. High prices for grain resulted in a reduction of grain feeding. The results of the cow testing association work seem to indicate that high feedinf is not necessarily profitable, at least from the standpoint of immediate returns. Data on the continued use of grain in connection with other feeds are lacking, however. Interest in the use of silage increased materially during the year.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Boise (continued).

One of the best indications of the tendency towards improvement of dairy stock on the project is that 4o cows were sold for beef during the first nine months of the operation of the Boise Valley Cow Testing Association. It is believed, also, that there was an increase in the number of pure bred bulls in service. On the otherhand, several inferior beef bulls have been installed as the heads of certain grade herds, the action being based on the dual-purpose belief. The field work in connection with herd improvement consisted principally in assistance in the organization and conduct of the cow testing association, and in cooperative record keeping on 10 farms outside the association.

The principal development in connection with equipment was the construction of a number of additional silos. A total of 19 new silos were constructed, of which 11 were concrete, 3 stave, 3 modified Wisconsin, 1 lath and plaster, and 1 pit. Assistance was given in the planning of two dairy barns.

During the summer of 1916, bloat was unusually severe, although reliable figures on the extent of this difficulty could not be secured. Irrigated pastures were responsible for a great deal of the bloating, particularly where white clover predominates. The extent of tuberculosis on the project is not known, as there has been but little testing. Two herds, including 37 head, were tested during the year and showed one reactor. Considerable interest in the matter of testing has developed. Contagious abortion is generally regarded as the most serious disease of dairy cattle on the project, although, so far as the Reclamation Service census indicates, the disease is not as prevalent as it has been believed to be.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Boise (continued).

The following table states the quantities of butterfat purchased and the prices paid by the principal dairy manufacturing plants on the project in 1915 and 1916:

	Pounds Butterfat Received		Avg. price per pound of butterfat		Total paid for butterfat	
	1915	1916	1915	1916	1915	1916
Jenama Creamery Co.*	120,000	220,000	28¢	34.4¢	$33,600	$75,680
Hazelwood Creamery Co.	225,823		26¢		66.514	
Butter.....		217,378		28 ¢		60,866
Cheese.....		41,515		34¢		14,115
Nampa Coop.Creamery Co.	275,617	297,492	28¢	30¢	77,172	89,248
Boise Coop.Creamery Co.	237,423	167,807	26.6¢	30¢	63,154	50,342
Caldwell Coop.Creamery	189,385	135,642	25.5¢	28-1/4¢	48,293	38,319
Meridian Cheese Fact'y (Figures for 1916 include Bowmont & McDermott cheese factories.)	108,203	334,563	29¢	41.2¢	31,502	137,840
Parma Coop. Cheese Factory Cheese.....		37,465		31-1/4¢		11,708
Totals.....	1,186,451	1,451,862			$322,235	$478,118

* 1916 figures include butter, cheese, and ice cream.

These figures do not include all the dairy products of the project; on the other hand, they include some which are produced on lands adjacent to the project. It has not been possible to learn accurately how much milk and butterfat are produced on the project proper, but the figures in the above table show average prices paid during the year by representative manufacturing plants and indicate something of the volume of the dairy business. As a result of the cheese specialist of the Dairy Division, the Meridian Cheese Factory installed a whey separator during the year, with a resultant saving of approximately $20 per day.

The cost of production can best be shown by the figures of the testing association records, which, however, vary between wide limits with a number of factors, including feed and individuality of cows. One herd of 13 grade Jerseys, which stands at the head of the association for average production per cow, showed a feed cost of 8.7 cents per pound of butterfat at the time when the herd averaged 6.1 months in milk. A second herd which has been high in both prod-

Live Stock Industries on the Boise (continued).
uction and cost of feed includes 24 registered Holstein cows which, when they averaged 5 months in milk, produced butter-fat at a feed-cost of 22.8 cents per pound. The figures for other herds in the association lie between these extremes.

During the year, there was a strong tendency towards selling whole milk for cheese, the margin between prices for fat in milk and in cream being wide enough to compensate for the loss of the skim milk, in the judgment of many dairymen, particularly in sections where cheese factories are in operation.

Some of the most apparent needs in connection with production and marketing are a better system of distribution; stabilization of both production and marketing methods; standardization of products on the farms and in manufacturing plants, and, particularly, general improvement in the quality of the product and in the efficiency of cows.

The principal cooperative features of the dairy industry developed during the year included the establishment of two additional cheese factories, both of which are branches of the Boise Cooperative Creamery; the reorganization of the Caldwell Cooperative Creamery; the re-opening of the Parma Cooperative Cheese Factory, and the organization of the Boise Valley Cow Testing Association. Some interest has been manifested in the cooperative ownership of bulls and in bull associations, but little definite development in these lines has taken place. A Jersey cattle breeders' association was organized late in the year. The general sentiment seems to be more in favor of cooperation than ever before, in spite of the fact that there have been numerous failures in cooperative enterprises in past years.

THE BEEF INDUSTRY.

Interest in beef production increased markedly in 1916, as is shown by the figures secured from the Reclamation Service, which show an increase in the beef cattle population of from 1,059 head in 1915 to 2,296 head at the close of 1916. The situation with respect to breeds did not change materially during the year. Most of the beef cattle are range stock, which, in the better herds, have a prepondenence of Shorthorn blood. The popularity of the Shorthorn breed increased in 1916 until it amounted to a craze. This resulted in the payment of extravagant prices for inferior stock, as much as $200 per head having been paid for cows,

Live Stock Industries on the Boise (continued).
which, while supposed to be pure bred, are not worth $50 as beef producers, from the standpoint of individuality. The extravagance of the sentiment with respect to this breed has reached serious proportions and an effort is being made to discourage it.

It is estimated that about 3,000 head of cattle were fed in the Boise Valley during the winter of 1916-1917, but only a part of these belong on the Boise project. Four bunches were fattened on corn silage and hay and it is expected that some data with respect to these feeding enterprises will be obtained.

Blackleg has been on the increase in the Boise Valley for several years and it is appearing each year in districts where it has never been known before. The loss from blackleg usually is small, as most owners vaccinate their young stock as soon as loss occurs in the herd. Vaccination is is becoming general, but there are still many cattle owners who wait until a loss occurs, or even fail to vaccinate at all. Commercial vaccine in pellet form was used almost exclusively until 1915, when the Department of Agriculture vaccine became popular. Three points are emphasized in the use of this vaccine: cleanliness, the use of fresh material, and the non-treatment of heifers in advanced pregnancy. During 1916, about 1,400 head of cattle were vaccinated by Mr. Ireland, and approximately 2,000 additional doses of vaccine were distributed for use by farmers. The blackleg, like many of the other cattle diseases, was not confined to beef cattle, the comments here given applying equally to dairy stock.

The Portland beef market was somewhat stronger in 1916 than for several years, though the top price in 1916 was only $8.03 per cwt. A total of 258 cars of all kinds of cattle were shipped from Boise Valley points in 1916, as compared with 274 carloads in 1915. Most of the shipments are made to Portland, but a few are made to Seattle, and rarely to Kansas City, Omaha, Chicago, or Denver.

Much of the interest in beef production during the year has been based upon the hopes of securing outside range for summer use. A few individual farmers have permits to use the Boise National Forest and have undertaken the organization of a cooperative grazing association, the first of its kind on the Boise project. A few other have access to range in other places, but the total available range is either very limited, not easily accesible, or not satisfactory because of over-grazing.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Boise (continued).
The recently enacted enlarged homestead law is meeting with general disfavor among stock growers in the valley because of the effect it is supposed to have upon the securing of efficient supervision of public grazing lands.

THE SHEEP INDUSTRY.

In view of the present market conditions with respect to both mutton and wool, there is a strong sentiment in favor of sheep raising. The estimated value of $4.62 per head in 1915 as compared with $7.98 per head in 1916 indicates the general advance in prices during the year. Prices for grade ewes ranged from $10 to $12, or even more, per head. The sentiment toward the industry is indicated by the increase in population on 168 farms from 11,200 head in 1915, to 14,937 in 1916. Of these 168 farms, 123 report fewer than 25 head each; 21 report 25 to 50 head; 9, 50 to 100 head each, and 15, more than 100 head each. Three of the herds of the largest class include from 1200 to 1500 head each. The breeds and the number of pure breds in use are indicated by the data in the following table, which were secured from 81 of the 168 farms reporting sheep in 1916:

Predominating breed	Number of Farms	Number of pure breds	Number of farms using pure bred rams
Hampshires.....	18	357	15
Shropshires.....	35	270	26
Rambouilett.....	10	304	4
Cotswold.....	11	21	13
Oxford.....	2	101	1
Lincoln.....	5	2	2
Total.....	81	1055	61

Breed preference for Hampshires has developed to a marked degree and is becoming so strong that rams of other breeds find slow sale. Sometimes owners of pure bred Shropshires cross their ewes with Hampshire rams, the cross-bred rams selling more readily than pure bred Shropshire rams. Some of these cross-bred rams have been contracted for in advance at $20 per head.

Live Stock Industries on the Boise (continued).

Pasture or range in summer, and alfalfa hay in winter, with a few weeks on stubble fields in the fall, is the usual method of feeding. There is very little feeding for market, although good returns from fattening lambs have been reported. Some silage is used in breeding flocks. On good pastures no other feed is necessary; in fact, there is some complaint that ewes on pastures become too fat to breed properly. There has been some doubt as to the advisability of feeding silage to ewes before lambing, but the practice has nevertheless been favorably reported upon by some feeders.

In 1916, the Portland market was stronger than ever before in the history of the Union Stock Yards at Portland, the top price for lambs for the year averaging $9.33 per cwt., or $1.41 per cwt. higher than in previous years. Most of the sheep shipped from the Boise project go to Chicago or to other eastern points. A total of 48 carload shipments were reported during the year. About 75 per cent of these went to Chicago, where the demand and prices for western lambs were good throughout the year, the top prices running about 3 cents higher than at Portland. Most of the wool has gone to Boston. A total of 41 cars were shipped during the year, a decrease of 7 cars from 1915. Most of the wool shipments are made at Caldwell. The price for wool averaged about 30 cents in the spring and somewhat higher at the close of the year. Contracts at 35 cents for the finer grades were offered for the 1917 clip. A local woolgrower's association, for the purpose of grading wool and improving the pack on the farm, seems to be needed and its organization may be attempted during 1917.

Losses from liver fluke in one flock which was mentioned in the report for 1915, again occurred in 1916, some 50 deaths having been reported. Summer ranging of the sheep in the mountains to permit the renovation of ranch pastures has been suggested as a remedy for the trouble. With the exception of this one case, and a few losses from bloat, very little trouble among sheep was experienced during the year.

THE SWINE INDUSTRY.

The past four years have been hard years for the swine industry in the Boise valley. In 1913 and 1914, cholera was widespread and caused heavy losses. In 1915, when breeders were recovering from their fear of cholera to some extent, prices dropped to the lowest point for at least

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Boise (continued).
seven years. This caused another decline in the industry. In 1916, prices advanced until they reached the highest point since 1910 on the Portland market, but grain prices advanced even more in proportion, with much the same effect as the conditions of the previous year. The results of this combination of circumstances is that the status of swine growing on the project is extremely uncertain. The Reclamation Service reports a total of 16,097 hogs at the close of 1916, as compared with 25,286 at the close of 1915. The following table shows the distribution of hogs on 1,950 farms on the project at the close of 1916:

Number of farms carrying hogs.....	1,950
Number of hogs on these farms.....	16,097
Average number of hogs per farm.....	8.2
Number of farms reporting breeding herds.....	832
Number of farms having less than 5 brood sows..	735
" " " " 5 to 10 brood sows.....	68
" " " " more than 10 brood sows.	29

With respect to breeds and breeding practices, much the same condition exists as with dairy cattle, except that there is not such a marked tendency to follow fads. Poland Chinas led in numbers, with Duroc-Jerseys second. Additional data regarding breeds are included in the following table:

Predominating breed.	Number of farms	Number of pure bred	Number of farms using pure bred boars
Poland China.....	388	1,282	262
Duroc -Jerseys.....	261	590	133
Chester White or O.I.C.,.....	23	75	9
Hampshire.....	1	.....	....
Berkshire.....	18	33	14
Total.....	691	1,980	418

In the past two years, the Poland China breed has been increasing in popularity, due to the influence of some very good herds in the Boise valley, and to the aggresiveness of Poland China breeders. For the past two years at the Caldwell and Boise fairs this breed has been much better represented than others in numbers and quality. The general instability of the swine industry naturally is accompanied with unsatisfactory breeding methods, particularly with reference to the use of high class boars.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Boise (continued).

Summer feeding nearly always includes alfalfa pasture, which is sometimes the sole feed provided, particularly if grain prices are high or pork prices low. The principal grains used are wheat, oats, barley, and corn. The utilization of stubble fields in orchards for hogging off is practiced where fields are fenced. A common and unsatisfactory practice is that of carrying hogs on pasture with little or no grain during part of the year and then placing them in close pens on full feed in order to finish them. Frequent losses result from this practice and it is being discouraged. During the year 1916 feeding tests were conducted on 10 farms, chiefly for the purpose of determining the practicability of hogging-off various crops. Some very satisfactory results were secured in these tests. The best gains were made in a test in which 138 head of Duroc-Jersey pigs hogged-off a field of peas and wheat seeded separately but pastured simultaneously. The gains were 915 pounds of pork per acre from 3.6 acres of peas and 1.6 acres of wheat during a pasturing period of 36 days. There was practically no development with reference to equipment during the year, and such development is not to be expected while the present instability continues.

The field work in 1915 was confined largely to hog cholera control and the plans for 1916 contemplated much the same kind of work. However, the disease caused comparatively little difficulty in 1916 and such cases as appeared were promptly controlled. Thirty-five calls to examine hogs suspected of having cholera were received, but cholera appeared in only 12 of these cases. A total of 280 hogs were treated. While 34 per cent of the hogs treated showed temperatures of 104 degrees F. or higher at the time of treatment, only 3, or slightly more than one per cent died following treatment.

The hog market was very satisfactory during the greater part of 1916, but high prices for feed had much the same effect as low prices for pork in forcing unfinished stock on the markets. The average top price on the Portland market for 1916 was $9.28 per cwt., as compared with $7.21 per cwt. for 1915. The range of top prices for the two years was $6.50 to $10, in 1916, and $6 to $8.25 in 1915. It is very interesting to note that the high prices during the past seven years on the Portland market have occurred in a different month each year, as follows: 1910, March; 1911, January; 1912, September; 1913, July;

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Boise (continued).

1914, August; 1915, May, and 1916, December. Shipments of hogs from stations in the Boise Valley in 1916 amounted to 477 carloads, as compared with 521 carload shipments in 1915. The Portland and Seattle markets received the bulk of the shipments in 1916, shipments to eastern points and to California markets having been almost entirely discontinued.

Cooperative shipment of hogs has been popular on parts of the project and the practice is being extended rapidly. The Farmers Society of Equity, which is a strong organization, particularly in Canyon County, is handling practically all cooperative shipments, which include from 80 to 90 per cent of the hogs shipped from the territory tributary to Nampa. Cooperative shipping is proving to be advantageous to the hog producers in all respects. It appears likely that the practice will continue to increase in popularity and that the business will be handled largely by the farmers' organizations already in existence.

The future development of the swine industry is uncertain. The popularity of beef cattle and sheep, tending to draw breeders to those lines and away from swine breeding, makes any rapid and marked growth of swine production doubtful. While these and other facts have tended to eliminate a number of intermittent breeders and to reduce the size of herds on farms which have been somewhat overstocked, it is believed that the industry is tending towards substantial development and stabilization.

NUMERICAL STATEMENT.

Some of the more important items of work accomplished during the year are given in the following table.

Miles traveled	13,819
Farm visits made	664
Office calls	264
Persons visited	1,279
Letters received	410
Letters written	442
Circular letters distributed	15
Articles for publication	14
Meetings attended	78
Meetings addressed	64
Attendance at meetings	2,083

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Boise (continued).

NUMERICAL STATEMENT (continued)

Herds of hogs inspected.....	35
Number of hogs inspected.....	1,673
Outbreaks of cholera.....	12
Number of hogs in infected herds.....	660
Number of herds treated.....	11
Number of hogs treated.....	280
Number of cattle vaccinated against blackleg.....	1,388
Number of herds represented.....	82
Number of cattle tested for tuberculosis.....	37
Number of herds represented.....	2
Milk samples tested.....	448
Number of cows tested.....	122
Number of herds represented.....	10
Hogs weighed in feeding tests.....	599
Number of farms in feeding tests.....	10
Number of cattle weighed in feeding tests.....	30
Assistance given in connection with silos, farms	13
Plans for barns, etc., furnished.....	4
Organizations formed.....	4

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Swine Feeding Tests in 1916

Reports covering the swine feeding tests conducted on 7 of the projects in 1916 have been received. A total of about 60 tests have been reported, but in a few instances the conditions under which the tests were conducted were such that the meaning of the data secured is not entirely clear, or the results are not considered reliable. Eliminating these, there remain 52 tests, including a total of 2,084 different hogs. These 52 tests are classified as follows:

Kind of Test.	North Platte	Boise	Uncompahgre	Tieton	Shoshone	Huntley	Truckee Carson	Total
Alfalfa pasture:								
Number of tests.....	8	1	4	5	1	1	...	20
Number of hogs.....	669	33	135	86	15	22	....	960
Hogging Corn:								
Number of tests.....	1	...	...	1	...	1	....	3
Number of hogs.....	133	...	...	60	...	151	....	344
Hogging other Crops:								
Number of tests.....	..	6	...	1	...	1	1	9
Number of hogs.....	..	378	...	60	...	147	34	619
Dry lot feeding:								
Number of tests.....	3	1	5	4	4	1	...	18
Number of hogs.....	161	58	92	75	123	17	...	526
Miscellaneous:								
Number of tests.....	..	1	...	1	...	...	...	2
Number of hogs.....	..	27	...	3	...	...	...	30
Total:								
Number of tests.....	12	9	9	12	5	4	1	52
Number of hogs.....	963	496	227	284	138	337	34	2479

Less number of hogs in more than 1 test. . 395
Total number of different hogs.....2084

As soon as the reports on these tests can be tabulated on a common basis, they will be mimeographed, and copies will be sent to all the field men.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

MINIDOKA.

A case of young cattle dying on one project cattle ranch was investigated during the week ending March 17. Blackleg was suspected. It was found that the cattle were being fed only the chaff from the threshing of alfalfa seed. The younger stock could not digest this and were dying as a result. A change of feed checked the loss.

Winter weather is continuing much later than usual this year. In the past much range stock, both cattle and sheep, has been turned out by March 10. Instead of the expected thaw there was more snow and cold winds. This made an unprecedented demand for hay the price of which had been dropping. Most of the surplus hay remaining was being baled and shipped out. The storms of the week caused such a demand that the price jumped from $10 and $12 in the stack to $18 on Friday and $20 on Saturday. Long distance calls were received from cattlemen in the Raft River country who were entirely out of feed. Over 200 tons of hay were located in one district and almost that much in two others so that 1400 head of cattle were trailed in the following day.

The Minidoka Project Cattle Grazing Association met on Saturday with 90 per cent of the members present. There were applications from six men who wished to join the association. All but two of the 37 who participated in 1916 are planning on putting out their cattle again this year. The cattle will be taken to the public domain on April 5, providing the weather conditions permit. An effort is being made to secure a lease on the Bird Reserve surrounding the Minidoka Dam to use instead of the Forest Reserve. The leasing is under the jurisdiction of the Department of the Interior. Petitions are now being circulated. It is also planned to have the herder under a different contract this year, making him responsible for the cattle of the association.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Truckee-Carson.

During the week ending March 24 the maximum temperature was 63, minimum 12, and precipitation 0.

During the week ending March 31 the maximum temperature was 73, minimum 14, and precipitation 0.

Wheat varieties were planted on the Harmon-Austin farm near Stillwater. The field contained about 10 acres. The following varieties were planted in duplicate in the following order, with a local variety planted as a check on every third plat: Little Club, Rieti, Bluestem, Defrance, Marquis, Sonora, Dicklow, and Ghirka.

The detailed work of the period was as follows: Plat A3 was plowed, and made ready for garden; D3 and D7 were plowed, to be later planted to corn and sugar beets; the orchard, A2, was doubledisked; the corners of all plats on fields D, E and F were permanently established by sinking an 18-inch iron stake at each corner; two cows were put on the mixed grass and clover pastures, plats H3 and H4 on the 28th; the forest and shade trees on field C and about the buildings were pruned; "C" drain was cleaned; plats F5 to F12 and E1 to E6 were leveled and made ready for planting; plats E7 and E8 were plowed; the seed of the baby varieties was treated for smut with formalin solution.

The weather for the month of March has been unusually cold and disagreeable, the mean temperature being 6.5 degrees below normal. As a consequence, much of the spring planting has been delayed.

Scottsbluff.

During the week ending March 24 the maximum temperature was 57, minimum 9, and precipitation 0.

No outside work was possible except general chores.

Mr. Albert Osenbrug, who will have charge of the dry land rotations, arrived from Washington, D.C., on March 18. Mr. David W. Jones, who will have charge of the irrigated rotations, reported for duty on March 23.

During the week ending March 31 the maximum temperature was 76, minimum 17 and precipitation .02.

One man was kept busy hauling manure. The corn plats and fallowed plats in the dry land rotations were spring toothed to prevent blowing. If the present weather continues field work will begin the first of next week.

Mr. O.J. Grace, of the Office of Dry Land Agriculture, visited the station on the 28th and 29th.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio.

During the week ending March 31 the maximum temperature was 90, minimum 39, and greatest daily range 43. Warm, cloudy weather prevailed throughout the week. There was no precipitation. In spite of the continued dry weather, Indian corn on the station looks well and is making some growth. Sorghum planted last week is emerging; the germination being much better than was expected as the soil was very dry in many places. Winter oats are making practically no growth and on many plats are beginning to die.

All corn on the station was cultivated early in the week. All rotation plats to be planted to cotton were double disked to kill weeds and deepen the mulch, some of the plats having become very hard. Many of the plats are so dry that cotton will not germinate without rain. Field AB-8 and orchard E4 were all disked. Sudan grass was planted on two acres on field D3 for use in the steer pasturing experiment. Soil samples were taken on the milo and sorghum plats in the rotation experiments.

Mr. A. A. Bryan of the Office of Corn Investigations returned to the station on Friday.

Yuma.

During the week ending March 31 the maximum temperature was 93, minimum temperature 33 and greatest daily range 53.

Twenty four acres were irrigated.

Cotton ginning was completed. One four-horse team continued leveling on E series. A16 and 17, dates, were pruned and road row dates are being pruned. The north date row is being prepared for a heavy straw mulch. Few dates are in flower, but damaged by frost. A25, dates, and eucalyptus on A26, were plowed and harrowed.

Indian row planting of alfalfa on C27 and 28 were harvested. Manure was hauled on A15-3. The B orchard; dates on A series and south road, and numerous small plats, were hoed. Three acres were cultivated. E2 and D17 were disked. A shade was constructed in the hog pasture.

Messrs. Scofield, Cook and Taylor arrived on Saturday. Mr. Blair returned on the 30th.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

The Minidoka Project Sheep Grazing Association was organized during the week ending March 24. Reserve rights in the Sawtooth National Forest has been granted for 2500 head. The original applications were for 2200 head owned by 22 men. As three of these sold out their sheep and a few others decided not to risk their sheep away from home, the number of sheep represented by the 16 men who finally organized is 2373. It was decided to keep the sheep on the farms until early in May when they will be sheared and sent to the public domain until the forest season opens.

As the winter weather is continuing, the hay situation is becoming serious. The price of hay has gone to $40 in the stack with some selling at $45. Nine large cattle outfits from the Raft River country are now on the project. The shortage is relieved for the present by the farmers selling their surplus. The project sheepmen, as a rule, are still well supplied with hay. Bran and grain are being bought and taken to the range ewes. Several hundred head of cattle that were late getting in were sold and shipped to Montana. Calls for hay were received from three different sections of southern Idaho during the week but there was no surplus to send them. The Minidoka Project will have enough feed to last until April 1 or 5, by which time it is hoped that the snow will be gone so that the cattle and dry bands of sheep can be sent out.

The final organization meeting of the Minidoka County Farm Bureau was held at Rupert Saturday. The membership now numbers 264. There is much interest in securing a county agent to work on the problems of crop production and there is need for such a man. As the organization will also cooperate with this office in work with the live stock problems, it should be of great value to the work.

A dissolution sale of the pure bred herd of Leaf and Jones, purchased at the Davis sale on the Twinn Falls Tract last October was held during the week ending March 31. Although there were a number of outside buyers all but three of the cattle were purchased by Project dairymen. Competition was strong and the bidding spirited. The 17 head of registered Holsteins were sold at an average of $275.30. These had been purchased at prices ranging from $190 to $250, which was the reason that so many had been bought as they were sold below the actual value for this class of stock. The herd bull was sold for $525 which was $225 more than he was worth and $300 more than the purchase price.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

The weather became warmer during the week so that the snow was practically all melted. Some range cattle and a few bands of sheep were sent out during the latter part of the week, although it was a week too early as the range is muddy. Very little hay remains unsold. This is changing hands at from $30 to $45 a ton, the price depending upon the location, as the roads are so heavy that it cannot be hauled far. Market hogs are $12.50 per cwt. and grade brood sows due to farrow in April $35 to $45 for the better grades. Butter-fat advanced to 40 cents during the week. Two large clips of wool were contracted at 43 cents. Bran and shorts are selling at $2.60 at Rupert and at $2.00 at Heyburn and Burley where there are mills.

Tieton.

Fourteen farms were visited during the week ending March 31, five calls for assistance were answered by farm visits, milk was tested on nine farms, and eight office conferences were held.

During the week bids were requested on material required to build the cheese factory and contractors were supplied with plans and specifications upon which to submit bids. A tentative order for equipment and supplies was placed, shipment to be made subject to notification. A building site has been offered and accepted and the necessary grading will be done soon.

Reports received in regard to the crop of spring pigs have generally been rather discouraging. A short spell of cold weather caught many new litters and farrowing sows with inadequate protection. These reports may or may not be representative of the industry. Mr. R. D. Lewis repeated his phenomenal success of farrowing 68 pigs from the same six aged pure bred Duroc Jersey sows which farrowed the same number last spring, both farrowings being completed in two consecutive days. In 1916 Mr. Lewis lost only eight pigs from the farrow but this year his loss was 18. The cold weather is mainly responsible for the 1917 loss and Mr. Lewis is dissatisfied with results secured in individual farrowing houses in cold weather.

The price of alfalfa hay has been from $20 to $25 baled and f.o.b. cars at valley points during the week, due to the demand by stockmen in Idaho and Montana. Prime hogs advanced to $14 per cwt. on the local market and butter-fat recovered from 38 to 42 cents per pound at the end of the week.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

Three cases of suspected contagious abortion have been recently reported and inasmuch as there is considerable interchange of bull service this development may develop a significant problem. Mr. Price, State Dairy Extension Specialist, stated that the Pacific Coast dairies are seriously affected with abortion and that his department is planning a definite campaign against the disease. The State College is not now prepared to make the "blood test" for abortion but an effort will be made to secure such service in the next fiscal year.

Huntley.

Ten farm visits were made during the week ending March 31.

The car load of Holstein heifers recently imported from Wisconsin were tested by the State Veterinary Department for tuberculosis. One positive reactor and two suspicious cases were found. These cattle were supposed to have been tested in Wisconsin and passed as free from disease.

One more pure bred Holstein bull was imported to the project during the week and two others are known to have been contracted for to be delivered soon. Nine calves were vaccinated against blackleg.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

THE DEVELOPMENT OF LIVE STOCK INDUSTRIES ON THE TIETON PROJECT IN 1916.

The following summary of a report submitted by Mr. Bean includes the more important features of the development of live stock industries on the Tieton project in 1916, and of Mr. Bean's work in connection therewith. The work was confined chiefly to the dairy industry. Some attention, however, was paid to the swine industry, and, to a less extent, to beef production and sheep production. The usual state and federal cooperation was had.

THE DAIRY INDUSTRY.

Dairying continues to be the leading live stock industry on the project. The high prices for alfalfa hay during the winter of 1915-1916, when hay sold for from $15 to $25 per ton, depressed the industry to some extent. The condition was offset largely, however, by good prices for dairy products. A few new herds were established during the year.

In considering the dairy industry on the Tieton project, it is important to note that the project originally was promoted chiefly on the basis of fruit production. Somewhat more than 20 per cent of the acreage irrigated on the project in 1916 was planted to orchard trees. The farm units are small, 70 per cent of those in operation in 1916 containing less than 20 acres each and only about 10 per cent containing more than 40 acres. These small farm units require that the dairy industry be developed chiefly on the basis of small herds.

According to the Reclamation Service census there were on the project in November, 1916, 4,691 head of cattle of all classes, as compared with 2,313 head at the corresponding period of 1915. Approximately half of the cattle on hand at the close of 1916 are used, or will be used, for dairy purposes. The increase in the dairy cattle population during the year was due almost entirely to the production of young stock, there having been very few animals imported. Data secured from 373 farms showed that of this number 9.9 per cent carried one cow each; 38.4 per cent carried from 1 to 5 cows each; 28.4 per cent from 5 to 10 cows each; 17.2 per cent from 10 to 20 cows each; and 6.2 per cent more than 20 cows each. There was an increase of 58 in the number of farms carrying dairy stock during the year. The number of herds containing from 1 to 10 cows each increased, while those containing more than 10 cows decreased. Assistance

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Tieton (continued).
was given in the selection of 43 high grade cows and 11 pure bred Holstein bulls for importation to the project during the year.

In order to facilitate the securing of pure bred bulls by local farmers, arrangements were made with the local banks to loan money to farmers for the purchase of pure bred bulls. These loans draw interest at the rate of 6 per cent, and are payable in one and two years. Favorable arrangements also were made with the banks to loan money to farmers for the purchase of cows to replace the system previously operated by local creameries of loaning money to farmers for this purpose. When the banks loan money for the purchase of cows they ordinarily charge 8 per cent interest and require monthly payments of from $2.50 to $5.00 per cow.

The number of grade and pure bred cattle of the different breeds is shown in the following table:

	Holstein	Jersey	Guernsey	Shorthorn	Hereford	Galloway	Total
Grades.....	1907	146	31	108	...	6	2259
Pure bred bulls...	32	2	..	2	...	1	37
Pure bred cows....	12	8	..	...	1	5	26

There is yet a lack of pure bred bulls and cows, although conditions in this respect improved markedly during the year. The percentage of pure bred bulls used increased from 45 to 59, and the percentage of grade bulls decreased correspondingly.

The principal development during the year in connection with feeds and feeding related to the use of silage and to interest in mixed grass pastures. A silo campaign was conducted during the spring and summer and 23 new silos were built, assistance having been given in the construction of 13 of these. There are at present on the project 45 silos.

Herd improvement developed very satisfactory during the year. Approximately 75 inferior cows were sold for beef, 23 as the result of cooperative cow testing work, and 11 pure bred bulls and 5 pure bred cows were brought to the project. The proportion of farmers seeking "cheap" animals is rapidly decreasing. There were some improvements in the equipment used in dairying. In addition to the 23 new silos, 30 barns were built on the project during the year. There is need for much additional improvement in equipment, not only with respect to silos and barns but with respect to water supply.

Dairy cattle were remarkably free from diseases during the year. Six herds, containing a total of 84 animals, were tested for tuberculosis by the state veterinarian, but no reactors were found. Some losses from contagious abortion

Live Stock Industries on the Tieton (continued).

have been reported in the Yakima Valley but only three reports were received from the Tieton project in 1916 and these three cases could not be positively diagnosed. In connection with with the control of this disease, improved sanitary conditions and the necessary quarantine measures are being advocated. There was a rather heavy loss from bloat, the loss of 49 cows and 15 calves having been reported. The greater part of these losses were caused by pasturing alfalfa.

Records of full-year tests on 43 cows show an average of 244 pounds of butter-fat per cow per year. If this average is assumed to represent the project, the total butter-fat production in 1916 amounted to 325,000 pounds, as compared with 287,000 pounds in 1915, calculated on the same basis. The average price paid by centralizers and collecting agencies during 1916 was 30.5 cents a pound, so that the value of the dairy products was in the neighborhood of $100,000. This value compares with $243,000 for the apple crop at 2 cents a pound, and $285,000 for the alfalfa hay crop at $10.50 per ton. The data secured during the past two years in connection with the milk and feed records indicate that from 5.5 to 7 tons of alfalfa hay are required to feed a cow a year where hay alone is fed. Where pasture is used, it is valued at $2.00 per cow per month. Silage is usually valued at $4.00 per ton. On the basis of these values, the 43 complete 12-months records show an average feed cost of $42.39 per year per cow. On this basis, the feed cost per pound of butter-fat ranged from 10 to 33 cents, the average being 17.6 cents per pound. For all cows producing as much as 225 pounds of butter-fat the feed cost per pound of butter-fat was less than 20 cents. The average prices paid for butterfat during 1916 ranged from 26 cents, in May, June and July, to 37.9 cents, in December, the average for the year being 30.5 cents. This average compares with 29.2 cents in 1915; 29.3 in 1914; 33.4 in 1913, and 32.5 in 1912.

The Cowichee Cheese and Butter Factory, a privately owned plant, opened in May, 1916. This factory collects milk and cream, paying the farmers in its territory 7 cents more per pound for butter-fat in whole milk, and 2 cents more per pound of butter-fat in cream, than is paid by the creameries of the Yakima Valley.

The principal developments with respect to cooperation in dairying during the year were the cooperative cow testing work which was carried on in 24 herds, the organization late in the year of a cooperative cow testing association, which

Live Stock Industries on the Tieton (continued).
operates partly on the project and partly on an adjacent private irrigation project and the purchase of 3 cooperatively-owned pure bred bulls.

The outstanding needs of the Tieton dairymen are more pure bred bulls, better cows, better feeding methods -- including silos and pastures, improved equipment, and more satisfactory marketing methods. It is expected that, with the growth of small herds, more cooperatively-owned bulls will be secured, and improvement in cows will follow the use of pure bred bulls. Improvement in feeding is developing very satisfactorily and there are indications that the market situation will be improved largely through the organization of cooperative marketing associations.

THE SWINE INDUSTRY.

According to the Reclamation Service census, the number of swine on the project at the close of 1916 was 3,317, as compared with 5,473 at the close of 1915. The decrease of 39 per cent resulted from the low prices of hogs in 1915 and the early part of 1916 and the high prices of grain during the same period. A further explanation is that justt prior to the taking of the census in 1916, prices for hogs were very high and farmers marketed heavily. Data secured from 260 farms at the close of 1916 showed that 187 farms carried from 1 to 10 hogs each; 39 carried from 10 to 20; and 34 carried more than 20 hogs each. Very little breeding stock changed hands on the project during the year. There was some demand for brood sows during November and December but the supply was short. There are eleven pure bred boars on the project, of which 3 are Duroc-Jersey, 3 Berkshire, 3 Poland China, and 2 Hampshire. The breed preference is for Duroc-Jersey.

During the year cooperative feeding tests were conducted with 9 farmers. In these tests, the cost of pork production was calculated in 15 different feeding periods. Special attention was paid to hogging-off corn and other crops. Several of the feeding tests produced very satisfactory returns, particularly those in which corn or other crops were hogged-off. In a few instances very substantial improvement was made in the feeding methods pursued.

DEMONSTRATIONS ON RECLAMATION PROJECT
Field Notes.

Live Stock Industries on the Tieton (continued).

Practically all the hogs produced are sold at the local market. Two attempts at cooperative marketing were made, but their principal result was a substantial increase in the price offered locally, so that it was found unnecessary to ship. The prices paid locally for hogs during 1916 ranged from $6.00 per hundredweight, in January, to $9.80 per hundredweight, in September.

There were no serious difficulties with diseases during the year. Assistance was given in several herds in combating worms and lice. During the past few months the tendency has been towards an increase in the swine industry, but this development is retarded partly by the short supply of brood sows and partly by the inferior quality of brood sows which are available. The success secured by a few farmers in 1916 is attracting much attention from the less conservative swine producers, who went out of the business when prices were low about a year ago. No rapid expansion of the industry in the near future is expected but there are indications that a conservative development will take place.

THE BEEF AND SHEEP INDUSTRY.

Aside from a few exceptional cases, beef production on the project is chiefly a side line to dairying, especially as owners of small herds are becoming desirous of growing their own steer calves to maturity. There is an increased demand for the use of the Rainier National Forest by the owners of these small herds. The cooperative grazing association again had a very successful year, approximately 1,000 head of cattle being taken to the range in the cooperative herd. The chief activities in connection with the beef industry had to do with the increase of the utilization of the forest grazing lands by local farmers, and to the control of blackleg. A total of 584 animals in 49 herds were vaccinated against blackleg, and 13 demonstrations were made of the preparation and administration of Government vaccine, which is distributed by the State Department of Agriculture. Only three deaths from blackleg were reported during the year. The number of sheep on farms increased from 241 at the close of 1915 to 626 at the close of 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Tieton (continued).

NUMERICAL SUMMARY.

A general summary of the work of the year is indicated below:

Number of calls for assistance	282
Number of farm visits made,	1017
Number of office visits by farmers	251
Number of meetings held	36
Total attendance at meetings	810
Number of demonstrations at meetings	12
Number of lectures at meetings	30
Number of dairy stock brought to project	52
Number of circular letters distributed	6
Number of herds under test	24
Number of cows under test	188
Number of swine feeding tests	14

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Belle Fourche.

During the week ending April 7 the maximum temperature was 62, minimum 19, and precipitation .27.

Field work was begun the first part of the week and some plowing and discing was done in the dry land rotations. Some discing was done in the irrigated rotations during the latter part of the week. Most of the men were employed during the week in building hotbed, ice box, cleaning grain, caring for stock, and cleaning up.

A new bunkroom was built in the west end of the machine shed.

San Antonio.

During the week ending April 7 the maximum temperature was 88, minimum 37, and greatest daily range 41. The entire week was comparatively cool. There was no precipitation. The total precipitation since December 1, 1916 has been 1.78 inches. This is by far the lowest precipitation for the four months of December, January, February and March in the past ten years, being slightly more than half as much as the smallest amount for the same period of any other season.

Corn on the rotation plats was cultivated the first part of the week. Some disking was done on fallow fields. All of the fields are now in good condition to absorb any rainfall which may come. The principal other field work done was weeding. Soil samples were taken on the milo, sorghum and oat plats in the rotation experiments.

Messrs. Scofield and Cook visited the station on Friday and Saturday. Mr. Fred Taylor of the Office of Markets and Rural Organization was a visitor on Saturday.

Scottsbluff.

During the week ending April 7 the maximum temperature was 62, minimum 15 and precipitation 0.

Considerable outside work was done during the week. All wheat plats in the irrigated rotations, the wheat plats in the dry land rotations, and the wheat varieties plats were put in shape for seeding, which will be done the first of next week, if weather conditions continue favorable.

Mr. Jacobson returned from Washington, D.C. on April 6.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Truckee-Carson.

Prof. Peter Frandsen, of the University of Nevada, was a visitor at the experiment farm, during the week ending April 7, and plans were made for an experiment to be conducted here with eel worm potatoes as follows:

Plat	1	Untreated seed				
"	2	Seed heated	24	hours	at	40° C.
"	3	"	"	"	"	" 30° C.
"	4	"	"	12	"	" 40° C.
"	5	"	"	6	"	" 40° C.
"	6	"	"	12	"	" 35° C.
"	7	"	"	6	"	" 35° C.
"	8	Untreated seed.				

Detailed work performed was as follows: Plats E3, 4, 5 and 6; F8 and 12, were seeded to wheat, and F6 and 11, to barley; beets, turnips, salsify, carrots and onions were planted in the garden; plats D4, 7, 8, E3,4,5 and 6, F6, 8, 13 and 14, H1, 2,3,4, Y1,2,3,4,5,and 6 were irrigated; plats E7 and 8 were leveled for sugar beets.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Huntley.

Thirteen farm visits were made during the week ending April 7, and 41 calves were vaccinated against blackleg.

One report of hog cholera was received and investigated. The case looks suspicious but as no deaths have occurred and therefore no post mortem examination made, it was impossible to positively diagnose the case.

Shoshone.

During the week ending April 7, 19 farm visits were made, 28 office calls were received, and 27 cattle were innoculated for blackleg in 6 herds.

Attention is being given to grass pastures. To date, 29 farmers have ordered seed for sowing about 135 acres. Most of these men are sowing the mixture recommended by the Huntley Experiment Farm.

One of the herders received cattle Saturday of this week to be herded on the range adjoining the project. The grass is very short as yet, but since hay is so high priced, the farmers are anxious to quit feeding.

The herd to be sent to the Forest Reserve Range is very small this year. The Directors of the Shoshone Livestock Association had hoped that the new arrangement with the herder would induce the farmers to send their cattle. It seems that the farmers prefer to send to the range near the project, so that they can see their cattle occasionally and bring them home when they desire.

An effort is being made to get a few farmers to sow grain and peas for hog forage. The farmers hesitate because of the cost of pea seed and because they think that the waste will be great.

An attempt is being made to get a number of farmers to make a test of corn, using seed furnished by the Huntley Experiment Farm. It is thought that an impetus will be given to silo construction if the farmers get satisfactory yields of corn.

Truckee-Carson.

A trip was made to Reno on Monday of the week ending April 7, for the purpose of discussing plans with the Extension Department of the University, and the Nevada Packing Company, whereby the Nevada Packing Company may place bands of sheep in the hands of farmers on the project, to be handled on shares.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

It was not possible to make final arrangements at this time. However, the prospects for satisfactory arrangements seem favorable. Most of the farmers interested will not be able to handle sheep until this fall on account of scarcity of hay.

Some time has been devoted to preparation for the proposed turkey growing experiment in cooperation with the Bureau of Animal Industry. Arrangements have been made for the purchase of the poults from Los Angeles, and the work on the pens at the government farm now is under way. The young turkeys are due to arrive on the project the first week in May.

The price of alfalfa hay has recently reached $25 to $30 per ton, f.o.b. cars, Fallon. Twenty dollars was the prevailing price until the past few days. At these prices, every available ton is being put on the market. Several cars a day are being loaded out of Fallon. Potatoes are selling wholesale from $70 to $80 a ton, and wheat and barley are $60 retail.

The present season is unusually late. The buds on the trees are just opening, and the new growth of alfalfa is not yet far enough along to afford grazing except in a small way for horses.

Uncompahgre.

Fifteen farm visits were made during the week ending April 7, and 10 calls for service were received. Some time was spent listing orders for the proposed importation of dairy stock. On account of the hay shortage in the valley, many farmers are hesitating to buy cows. Hay is selling at $20 per ton.

Two cars of hogs were sent to Ogden, Utah during the week and brought $13.75 per cwt., f.o.b. shipping point. Hogs are scarce on the project at present. Two hog feeding tests were completed during the week.

Weather conditions are again favorable for early spring work.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

THE DEVELOPMENT OF LIVE STOCK INDUSTRIES ON THE MINIDOKA PROJECT IN 1916.

The following is a summary of the report made by Mr. E. F. Rinehart on the development of live stock industries on the Minidoka project in 1916, and on his work in connection therewith. The usual state and federal cooperation was had in this work.

THE DAIRY INDUSTRY.

Owing to the high prices of hay and other feed crops, the interest was not as marked in 1916 as in certain previous years. For a time there was a tendency for some farmers to go out of the dairy business, but prompt action, aided by successful dairymen, checked the tendency before any serious loss resulted. The number of dairy cattle on the project increased from 6,902, in 1915, to 7,314, in 1916. If only the 1,180 farms carrying dairy cattle at the close of the year are considered, the average number per farm was 6.4. Of these 1,180 farms, 965 carried fewer than 10 cows each; 156 carried from 10 to 20 cows each; 42 carried from 20 to 30 cows each, and 17 carried more than 30 each. The increase of 5.9 per cent in the dairy stock population during the year was chiefly the natural increase, there having been no numerically important importations.

The general prosperity of the farmers and careful consideration of the economic aspects of the dairy industry, resulted in increased interest in improved stock and in the use of pure bred sires, although the average farmer has not yet reached the stage where he is willing to pay the prices necessary to secure good stock. The number of cattle of the different breeds is shown in the following table:

BREED	PURE BREDS		GRADES	
	No. of farms	No. of stock	No. farms	No. stock
Jersey.....	23	122	348	2022
Holstein.....	18	57	136	1090
Shorthorn....	4	4	262	1817
Common, or cross-bred.	...	...	389	2202
Total.....	45	183	1135	7131

The interest in better breeds is confined mostly to the Jersey and Holstein. As there are now good individuals of each breed, it is probable that the two will be of about equal importance on the project. The interest in dual-purpose cattle is not great, as is indicated by the fact that there are but

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Minidoka (continued).
four pure bred Shorthorn bulls kept for dairy purposes. During the year assistance was given in the selection and importation of 2 Jersey bulls, 5 Jersey cows, 2 Holstein bulls, and 23 Holstein cows.

The majority of dairy cattle are fed hay alone. About 25 dairy farmers now raise and feed stock beets, while a few more feed beet pulp. A very small number of farmers feed grain. Generally speaking, the standards of care and breeding are not high and efforts are being made to improve them. There are as yet no silos but interest in silos is increasing. Testing and record-keeping have not yet been developed extensively. As the interest in pure bred bulls is widespread, one of the present drawbacks to the use of the best animals is poor care and feed. It is deemed important to improve these conditions on each farm where the ownership of pure bred bulls is contemplated. It is the present policy to help select pure bred bulls and cows only for those farmers who have learned to care properly for grades. There is some tendency to improve the character of barns used. A half-barn, with mangers opening to the hay stack outside, with stanchions, cow platforms and gutter is cheap and sanitary and is advocated for those who are not yet ready for better barns. Assistance was given during the year in planning two modern dairy barns.

A community tuberculin testing association was formed and testing was done by the local deputy state veterinarian. So far as can be determined, the cattle on the project are entirely free from tuberculosis. Abortion, however, is present. The disease is spreading somewhat and numerous calls for information regarding its control have been received. In three herds vaccination was practiced, the results in two seeming to be satisfactory while in the third the losses were not checked. The dairymen are becoming well informed regarding this disease and are using every precaution to prevent its spread. The losses from bloat were unusually heavy in 1916, resulting, in some instances, from excessive white clover in irrigated pastures, and in other instances from pasturing clover and alfalfa.

It has not been possible to secure complete information regarding the quantities of dairy products marketed during the year. The cost of production is available only in five herds where systematic records are kept. In these herds, the feed-cost per pound of butter-fat has varied from 11 to 23 cents. These herds, however, are far above the average. The marketing situation is unsatisfactory. Efforts were made during the year to improve this condition and some progress was made.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Minidoka (continued).

The Acequia Cooperative Cheese Factory, organized in 1915, operated throughout the year 1916 with increased production, ready sales for cheese, and an average price of 33 cents a pound for buetter-fat to the producer. During the year the factory manufactured 115,000 pounds of cheese made from the milk of 280 cows owned by 54 patrons. The operation of the cooperative cheese factory at Paul was delayed until late in the year. This factory has not yet passed its critical stage.

Generally speaking, there is but little tendency to make dairying the major industry on the farm. The profits from the industry are brought about largely through the use of home-grown feeds, and the fact that, with the dairy of from 5 to 15 cows, the home labor is utilized is a point in favor of small herds. The farms which show the best total returns are those having a diversity of both crops and live stock. These provide a fairly uniform distribution of labor throughout the year and the complete utilization of all the waste products of the farm. The diversity of dairy farms and something of the relation of dairying to other industries are indicated by the fact that of the 1,180 farms where dairy cattle were kept in 1916, 1,062 grew alfalfa; 797, grain; 352, sugar beets; 25 mangels, and 745 had irrigated pastures. It is not believed that it will be well to increase the size of the dairies beyond the capacity of the home labor, except in special instances. The herd of from 6 to 15 cows is popular and desirable, as it fits in well with the farming system, with special reference to the labor supply. As dairy cattle are kept at present in only 1,180 of the 1,848 farms in operation on the project, the industry doubtless will increase in size, but the increase is likely to involve additional farms rather than larger herds. The chief requirements in the development of the industry are better cows, better care and management, improved feeding systems and more cooperation.

THE BEEF INDUSTRY.

The interest in beef production is indicated by the fact that the number of cattle kept solely for beef practically doubled during the year. The beef cattle population increased from 1,220, in 1915, to 2,304, in 1916. These stock were owned on 201 farms, the average beef population of which was 11.4 head. As a rule, these cattle are kept in districts adjoining the range where they may be grazed for certain periods in the spring, summer and late fall. There is, however, some tendency to keep a few beef stock on the irrigated

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Minidoka (continued).

farms throughout the year. This applies chiefly to pure bred herds. Of the 201 farms carrying beef cattle in 1916, 137 carried fewer than 10 head each; 31 carried from 10 to 20 head each; 14 carried from 20 to 30; 12 from 30 to 50, and 7 had more than 50 head each. Importations during the year were confined to 7 pure bred bulls, which, incidentally, were not all of a desirable quality.

The interest in pure breds is confined mostly to Shorthorns, although there is some interest in pure bred Herefords. Either breeds offers good opportunities because of the demand for their use on the range. The adjacent range sections carry chiefly Hereford bulls, thus affording an opportunity for pure bred herds on the project. Statistics regarding breeds of cattle kept for beef purposes in 1916 are given below:

BREED	PURE BRED		GRADES	
	No. farms	No. stock	No. farms	No. stock
Shorthorn....	6	11	118	1407
Hereford.....	0	0	15	380
Galloway.....	2	8	1	35
Angus.....	1	1	0	0
Mixed breeds.	0	0	58	462
Total.....	9	20	192	2284

Assistance was given during the year in the selection of 2 registered Shorthorn cows and 6 registered Shorthorn bulls. An effort was made to confine the beef animals to the breeds that are most popular on the adjoining range, as it is felt that the relationship between the project beef producers and the range men should be extended.

As a rule, the winter feeding of beef cattle is the aftermath in the fields, and straw and hay. With the exception of the pure breds, many of the cattle are on range up to the middle of July, while others remain out all summer. A system of wintering cattle as cheaply as possible is still in vogue. There is much need for improvement in the methods of winter feeding. There are at present three beef herds kept on farms where mangels are raised and fed. Straw is available on 121 of the farms producing beef, and irrigated pastures are maintained on 136 beef producing farms. One beef outfit is planning to build a silo in 1917.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Minidoka (continued).

The diseases that menace the beef industry are contagious abortion and blackleg. It is not believed that any cattle are infected with tuberculosis. Abortion appeared in 3 herds during the year, but, as they were grades of rather poor quality, it seemed best to finish them for market and replace them with others which were free from infection. Blackleg is comparatively rare in this section. One case appeared in 1915 and 2 in 1916. Vaccine was secured and administered to 62 calves which had been exposed.

Marketing beef cattle from the small herds is difficult at present. These cattle are sold to local buyers who often must keep them in the yards until a full carload is secured. A feeder company at Burley offers unsatisfactory prices for well bred grades. Both systems of marketing are unsatisfactory, the producer in each instance being forced to accept the buyers own pric. Plans are being made for cooperative shipping. Unlike the other live stock industries on the project, beef production can be made the sole live stock industry on certain farms. A better production, however, is realized when the industry is combined with other live stock enterprises. Where a cooperatibe grazing association can be joined, a herd of beef cattle can be kept with profit in connection with other live stock, including dairy cattle and hogs. This is done at present in 62 instances. Neither sheep nor hogs alone are favored on the beef producing farms, as is shown by the fact that of the total number of farms carrying beef cattle, only 36 carried hogs and only 2 carried sheep. Of the 201 farms carrying beef cattle in 1916, 190 produced alfalfa; 121 produced grain, and 73 sugar beets. There is increased interest in the use of beet pulp.

At present, cooperation among the beef men is confined to the purchase and use of pure bred bulls and to cooperative grazing. A cooperative grazing association was organized in 1916 with a membership of 37. This association sent to the range a cooperative herd including 341 head. The season was unfavorable and the herder was incompetent, so that the results were not as favorable as had been hoped for. However, all but two of the members of the association plan to participate in cooperative grazing in 1917. It is evident that the beef industry will assume increased importance in the near future. The raising of pure bred bulls offers good opportunities. It is probable that there will be some development of the beef industry on the basis of yearlong feeding and grazing on the farms, chiefly because of the fact that the available range lands are very much limited.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Minidoka (continued).

THE SWINE INDUSTRY.

The swine industry has gone through a two-year period of abnormally high prices of grain and comparatively low prices of hogs, with the result that there has been some discouragement and considerable readjustment. One prominent feature in the readjustment is that the largest herds have been reduced. The closer figuring necessary under the conditions has been of much value in improving the quality of the stock, as well as the methods of care and management. In spite of all that could be done, in the fall of 1916 hogs were sold off too closely, so that there was a greater decrease in the number of animals kept than was desirable. The population at the close of 1915 was 43,933 head, as compared with 23,610 at the close of 1916, the decrease amounting to 46 per cent. A large number of young hogs were marketed during the latter part of 1916. The total number of hogs shipped in 1915 was estimated at 36,435 head, as compared with 38,460 head in 1916. In 1916, hogs were kept on 1,086 farms. Of these, 457 carried fewer than 10 head each; 230 carried from 10 to 20 each; 262, from 20 to 50 each; 104, from 50 to 100 each, and 33 more than 100 head each.

While the demand through the year for pure bred stock, especially females, was not as good as in previous years, there was no noticeable discouragement among the breeders of pure bred hogs. The demand for pure bred boars remained good, and as all the breeders realized that the present conditions are temporary, there was no disposition to go out of the pure bred business. The following table shows the numbers of the various breeds on the projest in 1916:

BREED	PURE BRED		GRADE	
	No. farms	No. stock	No. farms	No. stock
Duroc-Jersey	25	361	272	7299
Poland China	14	135	279	6426
Berkshire	4	48	17	441
Hampshire	4	39	8	140
English Black	4	35	3	129
Chester White	0	0	8	69
Mixed breeds	0	0	448	8488
Total.....	51	618	1035	22,992

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Minidoka (continued).

There has been a material reduction in the number of breeds during the past two years. The breed preference at present are for Duroc-Jersey, Poland China, Berkshire and Hampshire, in the order named.

The feeding methods may be divided into three general classes: Pasturing on alfalfa, winter feeding, and finishing for market. It is unfortunate for the industry that the great majority of hogs are forced to subsist on alfalfa pasture alone, or on alfalfa pasture and skim milk. The sentiment against this practice is growing, largely because of the favorable results secured on a few farms where a grain ration is fed in connection with alfalfa pasture. There is a marked improvement in the care and feed of the breeding stock. The feeding of hay and roots alone has not brought good results and better methods are being used. With good alfalfa, beets, mangels or cull potatoes, a small amount of skim milk and a little grain, brood sows are wintered at small expense and are kept in good breeding condition.

There has been a marked improvement in the quality of the hogs kept. This improvement has resulted largely from the decreasing tendency to use inferior boars and to practice cross-breeding. There are a number of good pure-bred herds on the project and there has been a strong demand for pure bred sires to use in grade herds. The improvement in swine herds has been greater than in either the dairy or beef herds. Special attention was paid during the year to the matter of breeds and types and methods of management. Illustrated lectures given in each school district on the project were attended by more than 80 per cent of the swine growers. The results of this interest are quite noticeable.

The equipment for caring for swine also has undergone a marked improvement. During the year no large colony houses were built but there was a great increase in the number of inexpensive shelters, particularly A-houses. This interest resulted largely from the fact that about 40 per cent of the 1916 spring pig crop was lost from exposure.

During the year 42 cases of suspected cholera were investigated and cholera was found in 7 herds, in which 521 hogs were treated. Only 18 head died following treatment. The cholera appeared on the project in 3 distinct outbreaks. As the result of the fact that the swine growers are well informed regarding the dangers from cholera, and because the cooperative spirit in connection with this disease has greatly increased, the disease was very effectively controlled. Losses from pneumonia were smaller than in former years and there were but few cases of infectious sore mouth. Satisfactory results were secured by the use of the iodine treatment for this disease.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Minidoka (continued).

Considerable time was devoted to a study of the market situation and to the need of cooperative shipping. Prior to 1916, practically all the hogs sold from the project were shipped to Los Angeles. In 1916, however, about 40 per cent of the shipments were made to Omaha and Denver, where somewhat better prices were secured. The shrink in shipments to those markets was reported as ranging from 1,000 to 2,000 pounds, but it is believed that the latter figure is too high. The price of hogs shipped from the project during the year ranged from $4.75 to $8.25 per hundredweight, f.o.b. project points.

Something of the relationship of swine growing to other industries is indicated by the fact that on each of the 1,086 farms where hogs were kept in 1916 other animals also were kept. There was a decided tendency to reduce the number of hogs to a point where their production will be based largely on the by-products of other industries. Of the 1,180 farms carrying dairy cattle, 908 carried hogs also. Of the 1,086 farms carrying hogs, 993 produced alfalfa; 805 produced grain; 344, sugar beets, and 13, stock beets.

The principal cooperative features of the industry so far is the hog cholera control organizations. All of those which were organized two years ago were kept intact during 1916 and were stronger than ever before. These organizations are now in their third year and the communities have learned who the local officers are and how to use them. One-third of the calls for investigation of sick hogs received during 1916 were received through the leaders of these organizations.

The indications are that any increase in the swine industry will be in the number of farms producing hogs rather than in the size of the herds. There is no doubt that in the past many farms have been heavily overstocked. It is questionable whether, in the long run of years, the 80-acre farm unit should produce more than 100 hogs per year, except in special cases. The man with from 4 to 10 good brood sows, well cared for, has always found the industry profitable and herds of this size are becoming more and more popular on the project.

THE SHEEP INDUSTRY.

The interest in sheep production on irrigated farms is increasing rapidly. This results partly from the high prices offered for lambs and wool and partly from the increased knowledge of the value of the small flock of sheep in utilizing waste materials. The sheep population of the Minidoka project increased from 16,748, in 1915, to 21,029, in 1916. In the latter year, sheep were carried on 289 farms, on which the average sheep pop-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Minidoka (continued).

ulation was 72 head. If from these farms, a small number carrying relative large herds be eliminated, the average sheep population of the farms carrying sheep would be about 50 head. Of the 289 farms carrying sheep in 1916, 133 carried fewer than 10 head each; 46, from 10 to 20; 49, from 20 to 50; 23 from 50 to 100; 28, from 100 to 200, and 10 carried more than 200 head each. Most of the farmers carrying fewer than 10 head each were those on which the owners are just getting started in sheep production.

The popular breeds on the project are chiefly those of the surrounding range. The sheep on the project at the close of 1916 are classified as follows:

BREED	PURE BRED		GRADE	
	No. farms	No. stock	No. farms	No. stock
Hampshire.....	5	246	19	820
Shropshire.....	0	0	15	106
Cotswold.....	2	209	18	344
Lincoln.....	2	300	23	3353
Rambouillet....	1	40	9	444
Delaine Merino.	0	0	8	250
Mixed breeds...	0	0	187	14907
Total	10	795	279	20224

Improved methods of feed and care are more marked in the case of sheep than in the case of any other live stock industry on the project. There are but few farm flocks over 25 head that are not fed either grain or roots in addition to hay in the winter time. In some cases over-feeding has been practiced. Improvements have been brought about by the introduction of better methods in a few flocks that were well distributed over the project, so that the examples of the owners of these flocks have been effective throughout the neighborhoods. Improvement through the use of good pure bred rams is raising the standard of many flocks to a high degree of individual excellence.

As conditions on the Minidoka project favor the production of early lambs, buildings suitable for lambing sheds are essential. On some of the farms the equipment is provided for by changing the barns or sheds for temporary shelter at lambing time. There are also a number of lambing sheds. The question of suitable lambing equipment has been given much attention during the year. At present the Minidoka project is the only section in southern Idaho where types of lambing sheds in general use are giving satisfaction.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock on the Minidoka (continued).

The sheep in this section are comparatively free from disease. Federal inspectors spend some time in the locality so that it is easy to check any difficulty in its incipient stage. Lip and leg ulceration was brought to the project in 1916 and spread to four farm flocks. The trouble was reported by a practicing veterinarian and the affected flocks were quarantined and treated. In all, 1100 head were affected but the total loss was only 11 head. Scab was worse in 1916 than in any previous year since 1910. It appeared in a range band in the winter of 1915-16 and spread to many farms to which orphan lambs were taken. Ticks are prevalent and are neglected in some flocks. In other dipping is practiced regularly. The small tape worm is causing some loss and considerable attention is being paid to its control.

In the small farm flocks, where the waste material of the farm is utilized, the cost of production is relatively small. In some cases the care of the sheep is actually considered more an asset than an expense. Where irrigated pastures are properly established and managed, they carry as many as 10 ewes and their lambs per acre. Where mangels are raised and fed in connection with hay during the winter time, the cost of winter feeding also is low. On the whole, the cost of production of sheep on the project is comparatively light. The demand for both mutton and wool during the past two years has been so strong that no efforts have been made at cooperative marketing. Most of the wool is bought by speculators early in the season. Lambs are usually sold at the buyer's own prices. The marketing system needs readjustment and preliminary work is being done on this problem.

The relationship of sheep production to other industries is indicated by the fact that of the 289 farms carrying sheep, 236 carried dairy cattle; 253 carried hogs; 61 carried beef cattle; 270 produced alfalfa; 179 produced grain; 88 produced either sugar beets or mangels, and 219 had irrigated pastures. There is need for cooperation in connection with grazing on the adjacent range lands and in marketing. Where the flock numbers more than 100 head of sheep, especially on the sandy soils of the project where good pasture is not available, it seems desirable to combine the ewes into cooperative range bands. One such band, containing 809 head, was sent out in 1916 and the results were very satisfactory, only 11 head being lost during the grazing season, which extended from May 1 to September 15 Arrangements have been made for two cooperative bands to use the Sawtooth National Forest in 1917. It is evident that the sheep industry on the project will increase and that it will be found generall profitable. The greatest obstacle to rapid extension at present is the high price for breeding stock.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Live Stock Industries on the Minidoka (continued).

MISCELLANEOUS.

During the year a total of 55 meetings were attended, 29 of which were arranged for by this office. A total of 31 committee meetings were attended. The attendance at the 55 meetings was 2,419, the average being 45. There was much interest in the special meetings held during the winter in the schoolhouses and other neighborhood meeting places. Very good results were secured by means of illustrated lectures.

The following is a numerical summary of the activities during the year:

Number of farm visits		615
Sheep	84	
Beef	93	
Dairying	123	
Swine	199	
Miscellaneous	116	
Hog Cholera:		
Number of investigations		42
Number of cases of cholera		7
Number of hogs treated		521
Meetings		55
Committee meetings		31
Number of lectures given		55
Total attendance		2419
Literature:		
Newspaper articles		7
Circular letters		6
Bulletins distributed		566
Buildings planned		12
Pure bred stock selected		60
Grade stock selected		68
Requests for services		1247
Office visits		322
Miles traveled		4220

WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

Yuma.

During the week ending April 7 the maximum temperature was 91, minimum 34, and greatest daily range 48.

Nineteen acres were irrigated.

The date plantings along the north road were mulched with straw. The east date row is being pruned. The seedling pecan plot was disked. C-44 was planted to Pima Egyptian cotton progenies. B-39 to 41 pasture lands were disked and seeded to Sudan grass. D-23 and 24 were bedded and furrowed. The bed system of growing Durango cotton will be followed on these plots. Tomato plants were moved from the cold frame and set out in A14-3. Beet plantings on B-18 were thinned. Volunteer alfalfa was hoed from D-18 and 19, cotton plots. B-21 castor beans were cultivated. Most of the old roots are dead but a good stand will be obtained from volunteer plants. One four horse team was leveling on D and E series.

During the week ending April 14 the maximum temperature was 91, minimum, 34, and the greatest daily range 48.

Thirty seven acres were irrigated.

Cotton plantings as follows were made during the week:

A9 - Kekchi progenies.
A24 - Durango progenies.
D-17- Cooperative series.
D20&21-Durango, Acala and Tuxtla.
D23&24-Durango, varied bed spacing.
E2 - Tuxtla progenies.

Indian corn varieties and teosinte was planted on A23. Date plantings on A18 to 21 and 25 were disked. C27 and 28 alfalfa rows; D13 flax; A12-2 and A12-3, potatoes and ten nursery plats, were cultivated.

The fig and pomegranates and D22, 25 and 26, cotton lands, were hoed. The farm roads and borders are being hoed.

San Antonio.

During the week ending April 14 the maximum temperature was 86, minimum 42, and greatest daily range 36. Dry weather continued throughout the week. The first precipitation for several weeks occurred, a total of .12 inch being recorded. The weather was comparatively cool which resulted in slow growth, even of irrigated crops.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio (continued).

Corn on the rotation plats and in width of row experiment was thinned. Soil samples were taken on the corn plats in the rotation experiments. That portion of field C5, on which flax varieties were frozen out and portion of the same field to be planted to cotton in the root rot experiment, were disked.

Mr. E. B. Brown of the Office of Corn Investigations spent several days at the station the first part of the week. Mr. Harold Riley arrived at the station on Friday to assist temporarily with the cotton work.

Belle Fourche.

During the week ending April 14 the maximum temperature was 70, minimum 25, and precipitation .80.

The first part of the week was too wet for any field work and the men were employed in working on the buildings, caring for stock, cleaning up the grounds, repairing drainage system, overhauling machinery, and mulching trees on the grounds.

Some disking was done the latter part of the week on the new breaking in the horse pasture and in the irrigated rotations.

Part of the dry land rotations was staked out and seeded.

Scottsbluff.

During the week ending April 14 the maximum temperature was 79, minimum 23, and precipitation .73 inch.

All spring wheat seeding was completed on both the irrigated and dry land rotations. The following spring wheat varieties were seeded on duplicate 1/10 acre plats in field C4-1-10: Defiance, Ghirka, Galgalos, Beloturka and Arnantka.

The first seeding of barley in the time of seeding test was done on April 12. This test is in field H-1.

Eight alfalfa plats in field K were crowned.

Manure is being hauled on field 1-I where a maximum yield test will ne conducted.

Most of the oat and barley plats have been put in shape for seeding.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Truckee-Carson.

During the week ending April 14 the maximum temperature was 70, minimum 27 and precipitation 0.

Barley varieties were planted on the Harmon-Austin farm. The test included five varieties grown last year.

Detailed work was performed as follows: Plats E7 and 8 were leveled ready for sugar beets; plat H2 was manured at the rate of 6½ tons per acre, and plowed after the application of the manure; H1 was manured at the rate of 6 tons per acre; cuttings and seeds of a number of varieties of trees were planted.

The weather remains abnormally cold. In 1916, many varieties of apples began to bloom about April 10. This year, no flowers have appeared on any of the fruit trees.

Huntley.

Under date of April 21 Mr. Hansen writes as follows concerning conditions on the Huntley Project:

"The season is at least three weeks late and we have been able to do practically no field work so far outside of a few days breaking sod. From present indications we will probably be able to start next week on the dry land. Practically no planting has been done in this district except in a few cases on the dry lands.

The sugar beet acreage contracted for is about one-fourth less than in previous seasons and will probably be cut down still further as a result of the late season, since it will be impossible to do much spring plowing. The Sugar Company is offering a bonus of $1.00 per ton over last seasons price. The high prices prevailing for other farm products are largely responsible for this decrease in beet acreage. Both the yields and sugar content of beets were low in 1916 and some of the growers are discouraged for this reason. There will be a greatly increased acreage planted to wheat. Winter wheat on the dry lands appears to be in good condition. Hay is very scarce and sells at from $20 to $25 per ton. Some losses have occurred among range stock as a result of the lack of feed, especially since the late storms.

Labor conditions are not serious yet, although there is an indication that there will be a scarcity later as the season advances".

DEMONSTRATIONS ON RECLAMATION PROJECTS.
FIELD NOTES.

North Platte.

During the week ending March 31 a call was received from a farm on which a bunch of 80 last fall shotes were affected with blood poisoning. About a week before the visit was made the males in the bunch had been castrated by the owner and ear marked with the knife used in castrating. At the same time the gilts were also given the ear-mark, with the same knife. The knife was not disinfected during the operations nor was the seat of the operation disinfected. As most of the shotes showed illness within 24 hours after the operation it is thought that in some way the operating knife became infected and the germs spread through the bunch. It is probable that at least 90% of the shotes will be lost.

One case of cholera was found during the week. Four herds consisting of a total of 89 hogs were vaccinated. One of the herds vaccinated was affected with cholera at time of vaccination. The others were not and were given the double treatment.

That the breeding qualities of show hogs need not be impared in order to fit them for showing is proved by the performance of Queen Viola, grand champion Chester White at the Omaha Swine Show. She has just recently farrowed 19 pigs, 15 of which are still living. She was purchased by A. C. Brecher, Alta, Iowa soon after the Omaha show for $1,000.

The Denver hog market on Tuesday of the week ending April 7 was topped by a load of hogs from the farm of Frank Powell of Morrill. The price was $15.15 per cwt., a record price for the Denver market to date. Mr. Powell ships from 3 to 4 carloads each year, and has been quite successful in the hog business.

The weather has been favorable during the week and spring farm work is in progress to a limited extent. If the weather continues to improve, it will not be long until farming operations are in full swing.

Preliminary work is now being done in the valley looking to the construction of a branch road of the Lincoln Highway through the valley. The proposed road is to leave the main line of the Lincoln Highway near North Platte on the east and connect with the Yellowstone Highway at Wendover, Wyoming, passing through the towns in the valley when practical, however, the main line is to be the shortest and most direct route feasible in order to save distance. The road is to be known as the North Platte Valley Highway System. All towns in the valley are very enthusiastic about this road and there is but little doubt about its being built.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

North Platte (continued).

Hogs were vaccinated in 9 herds, representing a total of 88 head. All were well at time of vaccination and were given the double treatment. One case of cholera was found Saturday. This is a case of harbored infection. The herd was very successfully vaccinated with serum alone last September following a slight out break of cholera. Only 5 out of 108 head were lost after vaccination last fall. It was thought that there was enough infection in the herd to immunize the bunch but such was not the case.

During the week three inquiries were received as to where alfalfa hay could be bought. One of the inquiries came from central Wyoming, another from Idaho and the other from Kansas. In no case could the desired information be given. Hay is very scarce and is now changing hands at $16 per ton.

An order for a carload of shotes was received from the State Serum Plant at Lincoln, but the shotes could not be located.

Corn is now selling for $2 per cwt; shorts $2 per cwt, and butter-fat 41 cents.

Three days of the week ending April 14 were spent visiting country schools over the valley with Mr. McMillian, the State Pig Club Agent, in the interest of pig club work. The response received at the various schools was much better in those schools where there were several 1916 pig cluo members. The indications are that some good pig club work will be done in the valley this year. Arrangements have been made for handling the pig club work directly through this office rather than through the State University as has been done heretofore.

Several banks in the valley have offered to loan money to pig club members with which to buy pigs. It is hardly probable that any pig club members will have to borrow money for this purpose, but it is believed that it will be a good feature because of the business training the boys would receive.

Hogs in 5 herds, 179 head, were vaccinated during the week. One herd was affected with cholera at time of vaccination, the others were not but were given the double treatment.

Farm work was begun. The indications are that there will be a large acreage of potatoes this year. One factor that will tend to keep the acreage down is the high price of seed.

Tuesday's hog market at Denver was topped by a carload of 83 Poland China hogs from the valley, for a price of $16.15 per cwt., a record for the Denver market. One farmer on the project has over 700 head of hogs on hand and when the spring pig crop is farrowed the number will reach over 1,000 head.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North
Boise.

The first half of the week ending March 31 was given to the Boise Valley Cow Testing Association. No tester has been secured to take charge of the work and in order to finish the year members have been requested to weigh the milk and take samples which were collected and tested. The arrangement is not entirely satisfactory but it is the best that can be made and most of the members are willing to take the samples. A total of 129 cows were tested this week, representing 10 herds. In this work County Agent Williams of Ada County, has assisted.

The Caldwell Cooperative Creamery Company has just completed a new plant into which it moved this week. In celebration of the event a meeting had been planned for Thursday but the attendance was so small that the program was not carried out. Farmers are badly behind with their work and the day was favorable for plowing, which is probably the reason so few attended the meeting.

The Boise Cooperative Creamery Company held a meeting at Meridian on Saturday to discuss plans for securing credit to purchase dairy cattle. Thirty men were present but nothing definite was accomplished.

Nearly the entire week ending April 7 was taken up with cow testing and blackleg vaccination. The latter work has been done largely through the Farm Bureau organization. On three days a man from the community in which the work was being done assisted with the work. While much more was accomplished than could have been done without the organization a great many men took advantage of the occasion, and went to the fields or elsewhere, leaving their cattle to be vaccinated without any effort by themselves.

Tieton.

Sixteen farms were visited during the week ending April 7; seven calls for assistance were received; nine office conferences were held, and 48 cattle in two herds were vaccinated against blackleg.

One day was spent at the Davis dispersion sale of 86 pure bred Holsteins near Granger on the Sunnyside project. This herd averaged $340 each. Mature cows sold at $400 to $1,000 each. Young stock were mainly included at $300 to $700. A few calves sold under $300. Two heifers due to freshen this

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

fall were brought to the Tieton project at $210 each. Wisconsin, California and Pacific Coast breeders bought heavily at the sale.

A Community Club has recently been organized at the Mark's School District. At the last meeting plans for community action to control the rabies epidemic were discussed. The illustrated dairy lecture given at this meeting was followed by questions relating to dairy methods.

Twenty three farms were visited during the week ending April 14; 16 calls for assistance were received and 8 office conferences were held.

Sunnyside project have annually lost a number of cattle from blackleg. It was recently learned that a majority have employed a veterinarian to vaccinate against blackleg at a charge of 50 cents per head. A few have administered a commercial pill vaccine but the use of the government vaccine had not been introduced. A suggestion was made that if 100 or more animals could be held ready for vaccination on a given date this office would demonstrate the complete method of using the government vaccine. Subsequently a report was received and 7 farmers would hold 135 cattle convenient for vaccination on April 10. A trip was made to Sunnyside and the demonstration and service was performed. Three vaccination outfits will be purchased among the 7 farmers mentioned.

The first loss this season from blackleg was reported from The Cowichee District on the evening of April 12. Fifty eight head were vaccinated on the 13th and forty seven head had been vaccinated earlier in the week.

An auction sale of dairy cattle owned by a Tieton renter was held on April 9. This herd was in a very poor condition and the sale prices were affected accordingly. Mature cows sold at $65 to $97; two year old heifers at from $50 to $70, and yearling heifers at $30 to $65. Practically all were high grade Holsteins.

Huntley.

Fifteen farm visits were made during the week ending April 14. Ninety six calves were vaccinated against blackleg for seven different farmers and thirteen milk samples were tested for one farmer.

A wool and sheep exhibit at Billings was attended on one day of the week.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre.

Sixteen farms were visited during the week ending April 14, and requests for service were received from 9 farmers.

On Monday a trip was made to Mack and Grand Junction, with a farmer interested in purchasing a band of ewes. Mack has one of the largest shearing plants of the state. It is on the edge of the desert of Utah and Colorado and sheep are brought in from the winter range for shearing. The sheep wintered on the desert were in very poor condition and considerable loss is reported. The shearing plant is handling over 2500 sheep each day. One band of 10,000 owned by project men, sheared 5½ pounds of wool per head.

Two days of the week were spent on work of perfecting the plan for an importation of a carload of dairy cows from Wisconsin.

A member of the state utilities commission spent two days on the project in visiting live stock shippers and gathering data, with the idea of improving the conditions for shipping out live stock. One day was spent in assisting him in this work. His main object is to eliminate the long stops in shipment on Colorado lines. In this work he is enlisting the cooperation of the railroads and shippers. The main difficulty at present on the project is that the shipments are not large enough to make the 10 carloads at a time to insure better service.

A local hog buyer recently paid $15 per cwt. at shipping point for one carload.

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Belle Fourche.

During the week ending April 21 the maximum temperature was 73, minimum 25 and precipitation .24 inch.

A little snow fell the first part of the week, making field work impossible, and the men were employed in building fence, repairing harness and machinery, caring for stock, cleaning out culverts, and grinding feed.

During the latter part of the week the ground dried out sufficiently to permit some discing in the irrigated rotations. Some plowing was done in field K, hog pasture, and the seeding of the spring wheat varieties on the dry land was completed.

San Antonio.

Cool weather prevailed throughout the week ending April 21, the maximum temperature being 91, minimum 43, and greatest daily range 34. The total precipitation, which came as one shower, was .62 inch. This shower was not sufficient to moisten the dry soil materially. Heavier rains occurred in some portions of Southwest Texas, making possible the planting of cotton and forage crops.

The principal field work done was that of weeding milo and forage sorghum crops in the rotation experiments. Corn in the variety test on field B4 was thinned. Fields AB-8, C3, and D3 were weeded. The trees which were transplanted to the orchard early in the spring were watered. It has been necessary to water these trees every week or ten days since they were put out.

A number of palms were removed from the greenhouse and planted on the grounds surrounding the superintendent's residence. Other palms and ornamental evergreens purchased locally were also set out. Trees and ornamentals on the grounds were watered.

Yuma.

During the week ending April 21 the following temperatures were recorded: maximum, 92, minimum 40, and greatest daily range 42.

Twelve acres were irrigated.

The first cutting of alfalfa was made on B6 to 8, C1 to 5, and D1 to 5. A23 and A24, corn and cotton plantings, were harrowed, also the deciduous orchard. The fig orchard and dates on C43 were disked. C42, dates; the fig orchard and 9 small plots were hoed. B18, beets, and D18-19-22-25 and 26, cotton lands, were cultivated.

Yuma (Continued).

One hundred Diospyros lotus, S.P.I. 40669, received from the Plant Introduction Garden at Chico, were planted in the nursery.

One hundred thirty-five feet of 2 inch water main was added to the water system.

NOTICE

Five and Ten Percent Increase

Following is a letter from the Chief of the Bureau, under date of April 27, 1917, interpreting the clause in the 1918 Appropriation Act increasing pay of employees:

"Receipt is acknowledged of your letter in which you request to be advised whether the increase for employees provided in the Agricultural appropriation act for the fiscal year 1918 will apply to regularly appointed employees of this Bureau stationed in the field and serving all or part of the year, paid on lump-sum rolls, whose appointments designate compensation to be paid either on a per diem, monthly, or per annum basis, and also in cases where appointments read "when actually employed". In reply I inform you that the provision in question reads "including on the lump-sum roll only those persons who are carried thereon at the close of the fiscal year ending June 30, 1917. ******Provided, That the increased compensation provided by this section shall not apply to persons whose duties require only a portion of their time, except charwomen, or whose services are needed for brief periods at intervals (intermittently), or to any persons who receive a part of their salaries or wages from any outside sources under cooperative arrangements with the Department of Agriculture".

It is my understanding that the increase would, therefore, apply to farm laborers carried on the lump-sum rolls at the end of the current fiscal year, provided their service is not temporary or intermittent in character. It is not my understanding that the payment of salaries at a per diem rate "when actually employed" would prevent the increase from applying to employees so paid, if such employees are regularly employed".

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending April 14, seven farm visits were made, 30 office calls were received, 2 other conferences were held and 35 cattle in one herd were inoculated for blackleg.

A great deal of attention has been given this week to arrangements for corn growing tests. Twelve tests were arranged for during the week.

A state law has been passed requiring that all dairy cows be tested for tuberculosis. The first test is made free. The state stands part of the loss on the reactors. The farmers here do not expect any serious loss, though very few cows have been tested.

During the week ending April 21, 8 farm visits were made, 42 office calls were received, 3 other conferences were held, 1 creamery sample was tested and 28 cattle in five herds were inoculated for blackleg.

There were several calls about grass pasture this week.

The herder for the Shoshone Livestock Association is preparing to take cattle out on the range near the project next week. One of the other herders has already taken out some cattle.

The Creamery started making ice cream this week. By making ice cream they hope to be able to compete with outside creameries in the price of butterfat. The local creamery is paying 38 cents for butter-fat, while the other creameries are paying 42 cents.

Not much progress is being made in getting the farmers to sow a mixture of peas and grain for hogs, because the seed would cost nearly $10 per acre.

One man sold hogs to the butcher at 2 cents per pound under the top Denver market, the hogs to be weighed on a fill.

Boise.

One small herd of Jersey cows belonging to Mr. Stinson, president of the Boise Valley Jersey Association, was tested for tuberculosis this week, according to an agreement made some time ago. There were no reactors. Mr. Stinson has sold his farm and the herd with it. The new owner will continue the business.

Five herds of the cow testing association were tested this week. The association has not yet secured a tester.

Cattle were vaccinated on seven farms in Arena Valley. This is an extremely sandy section where livestock is especially needed for the manure and yet only a little stock is kept because of the difficulty of growing feed until the sand is subdued.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

Only 33 head of young stock were found on the 7 farms, and most farms have none. A meeting was held at the school house at night at which unusually good interest was manifest. County Agent R. H. Musser, successor to W. T. McCall, discussed potato disease control which is of particular interest at this time of year.

A few ranch sheep owners met at Meridian on Saturday and formed tantative plans for apool with which wool from all ranch flocks in the valley may be included.

The last tests to conclude the year's work of the Boise Valley Cow Testing Association were made during the week ending April 21. The records will be completed as soon as possible and the report for the year made. The reorganization of the association becomes more and more uncertain, due to the difficulty in finding a tester, as well as to serious shortage of feed, which makes dairymen reluctant to submit their herds to test. This especially affects those whose herds have led the association this year, they having a reputation to maintain.

Truckee-Carson.

During the week ending April 14, there were received 41 calls for assistance, and visits were made to 10 farms in answer to calls.

Considerable time was devoted to work in connection with the vaccination of cattle against anthrax. Dr Lockett, of the Veterinary Control Service of the State, visited the project during the week, and arrangements were made for vaccination work. A great number of cattle will be pastured on the lowlands of the valley this year, because of the scarcity of hay on the project. This condition will necessitate the vaccination of more cattle against anthrax than usual, since the available pastures are badly infested with anthrax. There will probably be 3,000 cattle vaccinated this spring.

Huntley.

Ten farm visits were made during the week ending April 21, 31 milk samples were tested for farmers and 33 calves were vaccinated against blackleg.

Molly Brothers of Billings have commenced to erect a small creamery at Worden. The creamery will be able to handle five

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley (continued).

hundred gallons of cream per day and will be ready to begin operations about May 1.

Tieton.

Twenty-four farms were visited during the week ending April 21, three calls for assistance were received and eight office conferences were held.

Two days of the week were spent in visiting farmers in regard to the cooperative ownership of dairy bulls in preparation for the bull association campaign planned for next week.

The dispersion sale of Mr. Oberg's grade dairy cows was well attended by project farmers and the majority of the cows sold there remained on the project. The prices ranged from $70 to $100, for the desirable dairy cows. The pure bred Hampshire sows with from 6 to 8 pigs of 4 to 8 weeks old sold from $55 to $75. Mr. Oberg has selected this time for a reorganization of his livestock business. He will devote his time to crop production for a year or two and plans to reengage in dairying and swine growing.

There is a good demand for brood sows, bred or with litters, and for weaned pigs. Inasmuch as there are very few pigs for sale in the upper part of the Yakima valley a half-day trip was made to see pigs reported for sale on the Sunnyside project. A majority of the pigs offered for sale are of inferior quality and are held at extremely high prices, making an investment for breeding purposes rather questionable at this time.

North Platte.

During the week ending April 21 reports were received from the surrounding cattle ranches that feed is getting very scarce and grass is starting slowly, as the weather is chilly and cold. On some ranches the supply of hay has been entirely exhausted and no more can be had and it is necessary to turn the cattle out to rustle for themselves. It was necessary to feed considerably more hay on the ranches this past winter than usual on account of stormy weather and snow. This, in a large measure, accounts for the hay shortage at this time.

The indications are that the acreage of potatoes in the Dutch Flatts district will be at least twice as large in 1917 as in 1916. Pearls and Eureka are the varieties grown on

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

most farms. Seed potatoes are scarce and as a rule are selling from $2.50 to $2.75 per bushel.

During the week considerable attention was given to the home gardening proposition in Mitchell. Two meetings were held in this connection, and at which over 100 men and women were present, another at which all the school children were present. Mr. Watson, state agent in charge of garden work, was the principal speaker at both meetings. The interest in home gardening is much greater in Mitchell than it has ever been before. A very large percent of all available ground will be utilized for garden purposes. This is true to a certain extent in all the towns of the valley. Mitchell, Morrill, Scottsbluff and Gering will each have a paid supervisor to look after garden work in the respective towns this summer.

Uncompahgre.

Thirteen farms were visited during the week ending April 21, 10 requests for service and information were received, and 13 samples of milk were tested for butter-fat.

There have been many losses of small pigs during the season due to poor housing and protection from the weather which has been quite severe this spring. The losses have been due to pneumonia. Several farmers using the individual hog houses have had considerable trouble. The colony houses, though few in number, on the project have given good satisfaction. There is considerable danger of a shortage in hog production on the project. For this reason farmers are being advised to breed more of their young gilts. The prices paid for hogs has had a tendency to tempt hog owners to unload rather than raise more. Corn is being shipped in in car lots from Nebraska and is being sold at $3.25 per cwt. Tankage is also $3.25. These are the only practical feeds available for hogs at present. The growth of alfalfa is welcomed and farmers are making use of the short growth early.

Hay is running very low and is selling at $20 a ton when it can be had. For this reason, much of the range stock has been taken to the hills.

Sheep shearing is under way in several bands.

Butter-fat is bringing 42 cents locally.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Scottsbluff.

During the weekending April 21 the maximum temperature was 63, minimum 30, and precipitation .96.

Oats on the irrigation rotation were seeded.

Grass was seeded in rye on B-II-111. Grass and rye were seeded on these series last fall but the stand of grass was very poor this spring.

During the week ending April 28 the maximum temperature was 75, minimum 26, and precipitation .82. The precipitation was in the form of a snow blizzard which commenced Thursday morning and continued the remainder of the week.

Oats and barley were seeded in the dry land rotations and in the variety tests. Five varieties of oats and six varieties of barley were seeded on duplicate 1/10-acre plats.

The week ending May 5 was very cold and snowy. The maximum temperature was 57, minimum 24 and precipitation .40 inch.

Very little seeding was done, due to the wet weather. All the beets in field K have been seeded. Oats and barley were seeded in the cultural experiment. In this test, plowing, disking and spring toothing are compared.

Fifty eight shotes, weighing about 100 pounds each, have been purchased. These shotes will be used in the alfalfa pasturing experiment which will begin next week.

The plumbing and sewer works are being overhauled. As the joints of the sewer tile were not cemented, the tile has become completely filled up with soil which has stopped drainage entirely. The tile are being taken out and relaid and the water pipes under the buildings are being buried under the ground away from frost.

Yuma.

During the week ending April 28, the following temperatures were recorded: maximum 95, minimum 46 and greatest daily range 46.

Twenty-three acres were irrigated.

Pasture land B-34, recently leveled, was seeded to a grass mixture. Alfalfa was harvested on C21-24-39-40-41; D1 and roads. The grounds were mowed and hoed. Four acres of fallow were run over with the weed cutter. Suckers were removed from fig plantings on "C". Pecan seedlings were plowed and hoed.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

Borders; ditches; cotton on D17-20-21-22-23; beets on D18; south and west date row, and 3 acres of small plots were hoed. All plots irrigated during the week were cultivated. Field stakes were set in seedling date lands. The strawberries are in full bearing. A marked difference in yield and quality is found in the several varieties.

The continued cool weather has been detrimental to the cotton plantings. Many of the growers are having considerable trouble in getting a good stand.

Although it was slow in starting alfalfa is making up for lost time and producing good yields. On account of high prices it is being baled and marketed as soon as ready.

San Antonio.

During the week ending April 28 the maximum temperature was 94, minimum 43, and greatest daily range 36. There was no precipitation. The warmest weather for several weeks was experienced. The light rain of last week benefited somewhat oats and garden crops, but was insufficient to have a very permanent effect on the moisture content of fallow fields or on cultivated crops. Corn, which has been making slow growth, showed appreciably the effect of a moisture shortage by wilting badly on Friday and Saturday.

All corn, milo and other row crops were cultivated the first part of the week. All fallow fields were harrowed and orchards were cultivated. Cotton was planted in many of the experiments under the direction of the Office of Crop Acclimatization. Many of the rotation plats are yet so dry that cotton will not germinate. However, unless rains come soon, the cotton in these experiments will be planted. It is thought that some of it will germinate now and the remainder will germinate if it ever gets wet.

Belle Fourche.

During the week ending April 28 the maximum temperatire was 65, minimum 28 and precpitation 1.15 inches.

Some plowing was done in field K, hog pasture, and the berries in the garden and on the dry land were uncovered. No other field work was done due to continued rains and snow.

The men were employed in working on the barn, building fence, grinding feed, cutting seed potatoes, repairing buildings and machinery and caring for stock.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson.

During the week ending April 28 detailed work was performed as follows: Plat H1 was divided into 68 small plats to be seeded to varieties of grasses, clover and other forage crops; 5 varieties of alfalfa were transplanted from H2 to H1; the entire farm was irrigated except D3 and 4, E1 to 6 and H1 and 2; F9 and 10 were leveled; sugar beets were planted on D7 and E7 and 8; alfalfa was planted in plats H7 and 10, Y1, 2, 3, 13, 14 and 15; a time of planting test of potatoes was begun on plat H2, the first planting being made April 19 and the second April 26, other plantings to be made on Thursday of each week; plats C2 and 3, growing sweet clover, were fenced, 9 pigs being put in C2 and 2 milch cows in C3 on April 21.

The seed potato situation is very serious. Mr. Headley inspected the seed offered for sale in the stores of Fallon and found practically all the seed badly infected with eel worm, only one small lot being free from the disease; rhizoctonia and scab were present in most lots. Eel worm seed is being offered by the merchants for the reason that no other seed is available without the payment of excessive prices. The seed now offered for sale is all local grown. It is probable that a considerably larger acreage will be seeded this year than in previous years, which means that the eel worm infected areas will also be extended.

The weather continues to be unseasonably cold which has resulted in delaying of the blossoming of apple trees fully three weeks.

The maximum temperature during the week was 70, minimum 20 and precpitation 0.

Huntley.

During the week ending May 5 the maximum temperature was 60, minimum 28 and precipitation .54 inch.

Weather conditions continued unfavorable for field work, and up to date no crops have been planted. A part of the dry land rotation field has been prepared for seeding. No field work has been possible on the irrigated land.

A small laboratory building for the use of the Biophysical Laboratory moisture requirement work and a foreman's house are under course of construction.

The men were employed in fencing alfalfa pastures for hog pasturing work.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

Three days of the week ending April 7 were spent at the opening of the stock yards at Salt Lake City, interviewing commission firms and others regarding the possibility and advisability of cooperative shipments to this point.

The new Salt Lake Union Stock Yards are modern in every respect. Prospective buyers are the new Cudahy Packing Company, which was opened this week, and the small local meat companies, chief of which is the Utah Packing and Provision Company. Leading commission firms are the Salt Lake Live Stock Commission Company, the Wyatt Commission Company and the Parsons Commission Company.

The show was well attended by stockmen, stock buyers and farmers from Utah, Idaho and other nearby points. There was much discussion and difference of opinion as to the actual value of the Stock Yards to the Inter-Mountain country. In spite of assurance to the contrary by the commission firms, the stockmen were generally of the opinion that it would not be safe to send shipments in on the open market at this place as the only important competitors of the one big packing plant would be the speculators and buyers from other points who would buy to ship to California or to Denver or Omaha. The bidding and sales at the opening of the yards corroborated this opinion, as much of the stock was bought to be shipped to other points. It is possible that much of the stock for this Packing Company will be bought in the field in Utah and southern Idaho.

The stock show held in connection with the opening of the yards brought out several carloads of well finished hogs and sheep. Practically all of this stock that was in first class market or show shape came from the Idaho Falls and Blackfoot districts in Idaho where they had been finished by three large outfits. The only real competition was among these.

Several carloads of good steers were exhibited, although none were finished. The short notice for the show is largely responsible for the lack of finish of most of the show stock.

The highest class animals were in the hog and sheep classes. The individual steer class was of the small fair type, the animals entered lacking both in type and finish, many of the individuals in the carload lots excelling that of those shown as individuals.

But few first class pure breds were shown. Two good Shorthorn bulls were sold at private sale at $350 each. The other registered Shorthorn and Hereford yearling bulls sold at auction from $175 to $410. A three year old registered Hereford cow, apparently barren, was sold without guarantee for $160. Con-

Minidoka (continued).

sidering the quality, all pure stock sold unreasonably high and the bidding was confined to small stock owners and beginners, but few of the experienced men, either range men or pure bred breeders bidding. Although the prices being paid were too high, the men who had consigned the stock did not consider it high enough and withdrew many of the animals from the sale. The lack of knowledge of the proper types was much in evidence.

The value of the Stock Yards to the Minidoka project remains yet to be seen. It is a shorter trip with less freight rates and somewhat less shrinkage but it is possible that there will be a lack of competition at the yards. The greatest need to make the Salt Lake Union Stock Yards a complete success is another large packing house.

The week ending April 14 was spent in general field work, answering requests and delivering the grazing permits to the members of the Minidoka Project Sheep Grazing Association.

In response to a call from the Governor, local county officials held meetings to discuss the possibility of an increased production. The attendance was made up mostly of business men and professional men. The meetings brought out the fact that practically all men who are farming properly can easily secure funds at the banks. Those who have neglected to put their farms into proper shape and whose crops usually fail are the ones that will have difficulty in securing aid. Adjoining dry farmers who have no feed for their horses nor seed for the spring sowing were the biggest problem for it was conceded that spring grain in this section is apt to be a complete failure. For the men whom the banks and business men would not carry, an appeal was made to the State for financial assistance by the committees.

Three hundred head of cattle belonging to the members of the Minidoka Project Cattle Grazing Association were put out on the sage brush range of the Public Domain during the week. The grazing is still poor but the supply of hay was exhausted on these farms. The remainder of the herd will be held on the farms until May 1.

Uncompahgre.

Fourteen farms were visited during the week ending April 28, four conferences were held at the office and requests for service were received from seven farmers.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

There has been a great shortage of hay during the last few weeks. Many of the farmers have plowed up a great deal of alfalfa to make room for potatoes and grain. This looks rather serious to the live stock industry next winter. An effort is being made to encourage the farmers to plant alfalfa seed with their grain to take care of this phase in the future.

Two thousand head of ewes were recently shipped in from Montana at a cost of $12 per head. Several local sheep-men owning several bands have been compelled to reduce their numbers because of reduction on the range.

Truckee-Carson.

For the week ending April 28 there were received 24 calls for assistance, and 18 farms were visited on request. Considerable time has been devoted to assisting the State Disease Control force in anthrax immunization work and tuberculin testing. During the past week three of the dairy herds on the project were given the tuberculin test. Out of 30 animals tested, 4 reactions were found. Tuberculin testing is not compulsory in this state, nor is there any provision made for reimbursing on account of loss when animals are condemned. These conditions make the work rather slow. Reacting animals are branded so that they may be discriminated against ever after. This is as far as the Veterinary ControlService can go now.

On Friday a pig feeding test was started at one of the ranches. Twelve pigs averaging 100.2 pounds were weighed into the experiment. They will be fed skim milk and grain. The owner in this instance was induced to conduct the test by the very excellent results secured in feeding test by a neighbor, the final results of which have not been reported.

The farming conditions are improveing slowly. Alfalfa is making a slow growth, sufficient only to furnish pasture for horses, sheep and cattle; but cattle and sheep must be pastured with great precautions, as the danger from bloat is very great. The loss from bloat in cattle and sheep in this locality is perhaps as great as from all other causes combined.

Sugar beet planting is progressing, and the acreage is being increased considerably over what was originally pledged by the farmers. The largest acreage that has ever been cultivated in this valley is now being put into crops of various kinds.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

A government farm loan association has been recently established here by the farmers for the purpose of availing themselves of the advantage of the Federal Farm Loan Bank. At the present time, only those ranches who have their homesteads free from government lien can avail themselves of the advantages of the Federal Farm Loan Bank.

North Platte.

On Monday of the week ending April 28, 112 young pigs were vaccinated on the farm of M. Schumacher. They were given the single treatment to protect them from cholera until they can be permanently immuned with the double treatment. To date at least 750 hogs have been vaccinated for Mr. Schumacher, and so far not a single abscess has been caused by vaccination.

During the months of January, February, and March this year, a total of 182 cars of hogs were shipped from the valley; 65 cars in January; 64 in February, and 53 in March. Total receipts $399,559.60. In February the total receipts amounted to $139,607.20, which is a record for receipts for hogs shipped from the valley. During the first three months of 1915 the receipts for hogs shipped from the valley amounted to $227,560.

Arrangements have just been made for consolidating three school districts in the vicinity northeast of Mitchell, thus forming one large consolidated school. This will make the fourth consolidated school on the project.

Snow fell for 3 days during the week. Out on the surrounding cattle ranges reports indicate that snow is over a foot deep, and that many cattle and calves are dying from lack of feed. In many instances a large percentage of the cattle herds are reported lost. Further west conditions are reported even worse than on the ranches surrounding Mitchell.

Fat lambs shipped from the valley last week sold for $15.65. Corn is now $2.40 per cwt., and going higher. Shorts, $2.30. Bran, $2.10. Seed barley, $2.25. Butter-fat 42 cents.

On Monday, Whitehead and Groff, Mitchell, shipped a carload of hogs which netted them $2,784.61. One hog in the car brought $113.22. By the end of next month they will have received approximately $25,000 for the hogs they have sold during the past 12 months. Mr. Whitehead is a banker in Mitchell and keeps an accurate record of all the swine business conducted on the farm and can tell just what profit there has been in the business for the past 4 years.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone.

During the week ending April 28, 6 farm visits were made, 26 office calls were received, 6 other conferences were held and 6 cattle in one herd were innoculated for blackleg.

A newspaper article offering assistance to the sheep men in organizing for the purpose of selling wool, shipping sheep and selling breeding stock, was written. It is thought that such an organization would be well worth while. Those who have been approached personally are favorably inclined.

The herder for the Shoshone Livestock Association, on Monday took a number of cattle out to the range adjoining the project. The grass was very short and only those who are short on feed sent out their cattle at this time. The weather has been very stormy this week and some of the cattle got away from the herder. One farmer near Powell reported ten of them at his place.

The county agent showed to the 500 Powell school children motion pictures of Boy's and Girls' club work. A short talk was given regarding the organization of a Boys' Pig Club. It was promised that seed corn would be provided free and that arrangements would be made for obtaining pigs for any one who desired to enter the club. The county agent presented the silver cup won by the Powell Garden and Canning Club last year as the state prize offered for the best club.

Grass pastures continue to be the main activity at present.

Huntley.

Seven farm visits were made during the week ending April 28. Owing to the very long and severe winter which has been experienced in this locality and to a very backward spring, many farmers of this locality are facing a very serious feed shortage for their live stock. Hay on the project has practically all been fed and many cattle will receive very short rations from now until grass appears. Practically no spring work has been done and a rain and snow storm which occurred during the last three days of the week will prevent any seeding for another week or two.

Eleven milk samples were tested for one farmer during the week and arrangements were made to start three more dairy herds on test beginning May 1.

Ten farm visits were made during the week ending May 5, and 7 calves were vaccinated against blackleg. One day of the week was spent in Billings.

WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

San Antonio.

During the week ending May 5 the maximum temperature was 92, minimum 52, greatest daily range 37, and precipitation .33 inch.

Cotton on the rotation plats was planted. Some of the soil was rather dry and the seed probably will not germinate before rain comes. Planting of cotton in miscellaneous experiments was continued. Milo on the rotation plats was thinned. The shower of the previous week wet the soil sufficiently to germinate the milo, which was in dry soil. Some weeding was done. Oats for hay were cut on four plats in the rotation experiments. The yields on these four plats were slightly better than one ton per acre. The plats cut were the highest yielding in the rotation fields. Corn on the rotation plats was cultivated.

Belle Fourche.

During the week ending May 5, the maximum temperature was 56, minimum 28, and precipitation .70 inch.

No field work could be done through the week, due to wet weather, until Saturday, when the seeding of wheat in the dry land rotations was finished. Some spring-tooth harrowing was done in the irrigated rotations and in the garden.

The men were employed during the week in building hog fence, working on the grounds and horse corral, caring for stock, shelling corn and hauling hay and feed.

During the week ending May 12 the maximum temperature was 69, minimum 28, and precipitation .02 inch.

The past week was ideal for field work. The ground in the irrigated rotations was disced, spring-toothed, harrowed, and the seeding of small grains was completed. The ground in field P, fall irrigation last year, was prepared and seeded to White Russian oats. Seeding of variety grains in field O, nursery in field O and F was completed.

Discing of fall breaking in the horse pasture and the new 80 was finished.

The berries on the dry and irrigated land were uncovered, dead trees on the ground were replanted, 500 willow cuttings were set out in the garden nursery, and part of the garden was planted.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Belle Fourche (continued).

Two men spent a day on the Newell Park, cleaning up, pruning and setting out trees.

Some little time was spent on the new barn, the hog and sheep fences were finished, and the buildings cleaned.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

Forty two farms were visited during the week ending April 28, 3 calls for assistance were answered and two office conferences with farmers were held. Forty five cattle, in two herds, were vaccinated against blackleg.

Mr. J. G. Winkjer, of the U. S. Dairy Division, Mr. J. N. Price, Dairy Specialist of the State College Extension Department, and Mr. N. C. Jamison, Dairy Field Agent, spent five days on the project cooperating with this office in a preliminary survey for the organization of a cooperative bull association. The proposition was very well received by practically all the live stock farmers in the Wide Hollow district of the project. Fifty four farmers signed the provisional membership agreements and pledged 354 cows to the association. Several other herds are desirous of membership. The question has, to agreat extent, developed into the size of the association and the final organization thereof. After talking with a number of farmers it was decided to postpone the meeting for the final organization for about 30 days, at which time the farm work will be less pressing.

Twenty-three farms were visited during the week ending May 5, 14 calls for assistance were received and answered by farm visits and 9 office conferences were held. Vaccination against blackleg was performed on 43 animals in 4 herds.

There is an increasing interest in the right way of handling the spring pig crop. During the last two seasons the carelessnes of many hog growers in saving pigs was as noticeable as the opposite condition is at present. Farmers who sold out of the hog business are paying from $6 to $10 for pigs at weaning time and numerous pigs are contracted for at that price. The high price of grain is a material check upon an even greater rush into the swine business.

The Reclamation Service estimates that approximately 3,000 acres will be added to the cultivated acreage of the project this season. Much of this increase is due to the campaign for the increased production of food and will grow potatoes, wheat, barley and beans. Although the weather continues cool with very cool nights and vegetation making but slow growth, farm work is well along. Small grains and sugar beets are beginning to come up, many alfalfa fields have been irrigated, and work on potato and corn ground is under way.

The butter-fat market dropped from 37 cents at the close of the week, prime pigs are quoted at $15.50 per cwt., and the grain market fluctuates practically each day, keeping, however, well above $50 per ton for feed grain, excepting mill feeds.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

Thirteen farms were visited during the week ending May 12, 5 calls for assistance were answered, and 4 office conferences were held. Two days were spent in the office at work on the cooperative milk and feed records and one day was spent in checking the project mailing list with that recently revised by the Reclamation Service.

The most important development during the week was the finding of hog cholera upon post mortem examination on Mr. Brady's farm. This is undoubtedly a hold-over infection from the outbreak on the same farm two years ago. Mr. Brady has lost two animals and serum is ordered for the remainder of his herd and for Mr. Oberg, his nearest neighbor. Other swine growers in that section were visited and warned of the outbreak.

The work on the cheese factory at Harwood is progressing satisfactorily. One of the farmers in the territory has purhcased an automobile which he will convert into a truck to use on a milk route. He anticipates hauling the milk for 10 cents per cwt., returning the cans empty. It is probable that he will return whey to the farm for a nominal charge in case there is sufficient call for it.

The Reclamation Service states that practically all the desirable land on the project will be farmed this year, including the school sections. This is a remarkable condition compared with the amount of uncultivated land at the beginning of the year.

Minidoka.

During the week ending April 21 plans were formulated and preliminary work done by the Sterling and Lincoln creameries of Twinn Falls and the De Laval Cream Separator Company to organize a Dairy Improvement association. Stock will be issued and sold to the bankers and business men, the money raised in this way to be used in placing a dairy expert in the field to bring in good dairy cows and sell them to the farmers. The cows will be sold on time, the notes bearing 12 per cent. For the extra interest the farmer is to pay, he will be given the assistance and direction of the dairy expert of the association. Mr. Merrill, Dairy Expert of the De Laval Cream Separator Company, was present to explain

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

the plan. The business men were in favor of the plan and promised to subscribe for the necessary amount of stock.

Club work was organized in the Burley, Rupert, Heyburn, and Pioneer schools. Because of the of the increased production movement, the interest of the teachers, parents, school boards, and commercial clubs was much better than at any time in the past. At Burley much assistance in the securing of lots, seed and other necessities will be given, while the agricultural teacher will be kept on a salary all summer to help in supervising the clubs.

Calls for assistance in locating work horses were numerous during the week, a total of 17 having been asked for. Only 3 were located.

During the week ending April 28 meetings were held by the Reclamation Service to consider the proposition of getting all vacant lands on the project in cultivation. The proposed new law and the resulting ruling of the Department of the Interior is creating much discussion and some uneasiness among those whose farms have not been entirely cultivated.

One of the greatest troubles with all the meetings and conferences held in regard to the increased production has been a lack of definite information as to the real needs of the situation. Many erroneous statements have been made and many absurd theories advocated. The real condition of the Minidoka Project is a shortage of labor and the high price of seed. It is also possible that there is a shortage of seed, as the dealers were all out by the end of the week. The shortage of horses that had been reported was supplied by the location of surplus horses on some of the farms of the project.

Prices are exceptionally high. Seed potatoes are $5 per cwt., with some farmers and a few speculators asking as high as $6.50. As these are not choice, importations will be made and committees of business men are at work on this problem. Wheat is $4 per cwt., and oats and barley $3 per cwt. Hogs are from $13.50 to $14, according to the finish. Butter-fat dropped from 47 cents to 36 cents during the week. Wool buyers, who have been offering 43 cents, raised to 45 cents. Although there is no definite organization, the smaller men are planning to pool their wool and sell together. The agreement made informally at the meetings in regard to this matter for this year is resulting in an increased price to those who had not sold previous to thattime. Hay is from $20 to $35 a ton in the stack, according to the location. Baled hay at the feed stores is held at $40. Work stock (draft bred) is bringing

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

from $140 to $225, the latter price being that paid for good brood mares, for which there is the greatest demand.

Boise.

During the week ending April 28, 13 small herds, in two communities were treated for blackleg.

B. W. Sowers, water-master in the Reclamation Service, is building the first silo reported this year. This is a 12 x 47 ft. solid wall concrete structure and will be one of the best built in the Boise Valley.

A silo excursion of two days is being arranged by the Canyon County Farm Bureau for the 8th and 9th of the month. The proposed trip will cover parts of the Payette Valley, Malheur County, Oregon, and the Boise Valley. Probably sixty silos will be visited or passed.

Saturday May 5, has been set for the receipt of wool for the pool informally organized at Meridian. On each succeeding Saturday wool will be received until all is in. A meeting will then be called for the election of a selling committee.

Shoshone

During the week ending May 5, 6 farm visits were made and 52 office calls were received.

Most of the time this week was given to mixed grass pasture and corn growing tests.

Farmers are very late this year in getting in crops. They were able to do very little plowing last fall and the ground has been very slow in drying out this spring. The acreage seeded may be less than last year, though everyone will do his best.

The Reclamation Service has taken all of the force off of construction work and will put in grain as much as possible of the land which is not taken and also that which is under ditch, of that division that is to be opened for entry this summer.

The alfalfa mill company is baling a great deal of hay now and shipping it out. This would have been finished a month ago if the weather had been fair so that the work would not have been interferred with so much.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte.

During the week ending May 5, a farmer on the project received from Minnesota, five head of pure bred Guernsey calves; 4 heifers and 1 bull.

Two carloads of fat hogs shipped to Denver sold for $2,960.88 and $2,839.75. One car load sold for $15.60, the top price for Tuesday's market.

A visit was made to the farm of Jas. Elliot, Morrill, who during the past three years has made it a practice to buy up small shotes during the early winter months, when they can be bought comparatively cheap. These he carries through the winter months on a limited grain ration and alfalfa hay, finishing them out for market the next summer on alfalfa pasture and grain. Mr. Elliot estimates that he can make more money handling hogs in this way than by raising the pigs himself. During the summer of 1916 he obtained a net profit of $65 per acre on 15 acres of alfalfa pastured with hogs.

Preliminary arrangements were made for conducting two hog feeding demonstrations on the farm of Mr. Jenssen in which two carloads of hogs will be finished for market on alfalfa pasture. One to be marketed in June, the other in August. Last year Mr. Jenssen sold $8,000 worth of potatoes from a 25 acre field. This year he will plant 35 acres of potatoes.

Sugar beet planting started on Monday of last week. Snow and rain storms thelatter part of the week stopped farm work for a few days. As yet alfalfa has made very little growth.

During the week we were informed by a prominent veterinarian in the valley, that there is not nearly as much colic in horses this spring as usual. He estimates there is not over one case this spring where there has been five cases in previous years. He attributes this to the fact that on account of the shortage of alfalfa hay, the farmers are not feeding as much hay as in former years. He believes that, as a rule, farmers on the project feed too much alfalfa to their horses.

Huntley.

Weather conditions throughout the week ending May 12 have been very favorable to farm work and seeding of the spring crops, which has been much delayed, is now progressing rapidly.

Twenty three farm visits were made and 66 calves, found in six different herds, were vaccinated against blackleg. One case of milk fever was successfully treated.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending May 5 the maximum temperature was 89, minimum 43 and greatest daily range 44.

Twenty-six acres were irrigated.

Alfalfa was harvested on B1 to 5, 9 to 17, C23-27 and 28. Plats D10 and C-26 were seeded to Sudan grass. Plats C6 and 19 were seeded to millet. D17-18-19-20-21, cotton plantings, were cultivated. The usual amount of hoeing, cultivating, and ditch cleaning was accomplished during the week.

Huntley.

During the week ending May 12 the maximum temperature was 72, minimum 28 and precipitation T.

Weather conditions were favorable for field work during the entire week. All small grains were planted both in the irrigated and dry land rotations. Sugar beets and alfalfa were planted in the irrigated rotations. Hog pasturing work was started on the rotation fields. Irrigated pastures are slow in starting growth and the cows have not yet been placed on the pastures.

San Antonio.

During the week ending May 12 the maximum temperature was 77, minimum 43 and greatest daily range 19. The early part of the week was unseasonably cold, resulting in delayed growth of all crops. Two good rains occurred during the week, one on Sunday May 6 and another on Saturday morning. The total precipitation for the week was 1.83 inches. These are the first consequential rains at the farm since November.

After the soil had dried sufficiently, all corn in the rotation experiments and in other experiments was cultivated. All fallow fields were harrowed. Six varieties of beans were planted for a variety test. Three small plats of Rhodes grass and one plat of Natal grass were planted. A part of the pasture near the barn was seeded to Rhodes grass and the remainder was seeded to Sudan grass.

The cotton planted on the rotation plats last week is emerging very irregularly. In an effort to get the seed into moist soil, it was planted in rather deep furrows. The rain on May 6 came before any of the seed had germinated and in many places washed considerable soil into the furrows. This covered some of the seed to such a depth that it is feared

San Antonio.

much of it may be unable to emerge through the crust which has formed. It is expected that replanting will be necessary. With this in mind a supply of seed has been secured and replanting will probably be done as soon as the soil is sufficiently dry.

The recent rains have stimulated greatly the planting of feed crops, such as sorghum, cowpeas, and June corn, and it appears that more than the usual acreage will be planted to these crops. Local seed houses are being taxed to capacity in supplying the demand.

Dr. E. C. Stakman of the University of Minnesota and Messrs. John H. Parker and F. J. Piemeisel of the Office of Cereal Investigations visited the station on May 7. They found small amounts of both culm rust and leaf rust in the oats on the station. A short trip was made north of San Antonio into a section where the growing of small grains is more common. Some rust infection was found in several fields inspected in that locality. Mr. Piemeisel remained at the station until Friday. Mr. Cardon of the Office of Crop Acclimatization arrived on Tuesday to remain at the station indefinitely.

Truckee-Carson.

During the week ending May 5 the maximum temperature was 69, minimum 27 and precpitation 0.

During the week ending May 12 the maximum temperature was 76, minimum 36 and precipitation .23 inch.

The following varieties of potatoes were planted on H2: Dietz Burbank, Netted Gem, Hundredfold, Early Ohio, Early Lunch, Colorado Pearl, New White Victor, Early Rose, Early Freeman, Burbank, Earliest of All, American Wonder, and Rusty Coat.

One hundred and twenty five pounds of potatoes badly infected with eel worm were secured and given the following treatment:

Lot 1 -	Untreated.				
" 2 -	Heated at	30° C	for	24	hours.
" 3 -	"	" 35° C	for	12	"
" 4 -	"	" 35° C	for	18	"
" 5 -	"	" 35° C	for	24	"
6 -	"	" 40° C	for	6	"
7 -	"	" 40° C	for	12	"
8 -	"	" 40° C	for	18	"
9 -	"	" 40° C	for	24	"

Truckee-Carson (continued).

After the heat treatment, they were dipped in corrosive sublimate solution for 2 hours, and planted in A2. The same plats are to be planted each year for 3 years with potatoes treated in the same manner. This is necessary in order to study the amount of soil infection arising from each treatment.

A portion of Oats Park in Fallon will be used to conduct some potato experiments relative to the distance of planting and size of seed. The remainder of the cultivable portion of the park will be used by the pupils of the public school for the growing of potatoes and beans.

Detailed work was performed as follows: Plat C1, growing sweet clover was fenced to provide pasture for horses; plat H18-19 and 20 were plowed and leveled; the potato varieties were planted on H2; cabbage varieties were transplanted from the cold framesto plat A3; B5 and 6 were plowed, harrowed and leveled and seeded to barley and sweet clover; plats Y1, 2 3, 13, 14 and 15 which previously grew sweet clover were leveled and seeded to alfalfa; E1, 2, 7, 8, C1, 2, 3, 4, 7, 8,, F2, G1, 2, 3, 4, 5 and H3 and 4 were irrigated; the tamarisk hedge which was frozen by the severe winter weather was cut to the ground; plats E1 and 2 were seeded to Riverview Special field corn.

Nine pigs have been pastured on sweet clover in plats C2 and 3 from April 21 to May 12. The pasture provided much more forage than could be consumed by the pigs, so cows were put in occasionally to keep it down. For this reason, the income per acre is not estimated. During the first week, the total gain was 11 pounds, 12 pounds during the second week, and 30 pounds during the third week. The results in detail are as follows:

Report of Results of 9 Pigs Pasturing Sweet Clover from April 21 to May 12, --21 days.

Initial weight	Pounds...	340
Final weight	" ...	393
Gain	" ...	53
Value of gain at 7 cents		$ 3.71
Barley fed	Pounds...	210
Value of barley at 1½ cents		$ 3.15
Profit		$ .56
Daily gain, per cent		.70
Grain per pound gain	Pounds..	396

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Belle Fourche.

During the week ending May 19 the maximum temperature was 91, minimum 32 and precipitation .68 inch.

The ground in the irrigated rotations was prepared and the planting of beets and potatoes was completed. Planting potatoes and corn in dry land rotations and variety potatoes in field O was finished. The land above the ditch in field P and the new breaking in the horse pasture was prepared for the planting of corn. The breaking in the New 80 acres was disced, harrowed and floated, and seeded to oats and alfalfa.

A four horse team was busy part of the week, plowing and discing in the dry land rotations and other fields on the dry land, and some seeding was done in field D, new dry land rotations.

Some of the men were busy in planting trees in nursery, overhauling machinery, building "A" hog houses, building fence, hauling water and feed to stock, and cleaning up around the buildings and grounds.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

Saturday of the week ending May 5, was the first day on which wool was to be consigned at the warehouse in Meridian of the pool being formed by the Boise Valley sheep owners. No wool was sent in, however, The reason for this was that only a few sheep have been sheared and farmers are especially busy with seeding and orchard spraying.

Two carloads of young Shorthorn bulls have just been shipped into the state from points in the central states by Crawford Moore of Boise. This stuff was inspected by County Agent Musser this week. While it averages very much better than cattle which have been brought to Caldwell, a great deal of it is very plain. Prices at which it is being held range from $150 to $225.

The silo excursion planned by the Canyon County Farm Bureau for the week ending May 12 was abig success. On the first day, over 100 miles was covered in the Boise and Payette Valleys; 43 automobiles carrying 176 people made the trip, stopping at 7 different farms to inspect silos of different types,and secure data relative to the cost and efficiency. The second day's trip, which included Nampa, Kuna and Meridian, was not so well attended.

Two cases of suspected hog cholera have been reported this week. One case near Nampa on the farm of Mr. Haggarty, seemed to be a form of paralysis similar to that reported to Mr.Jones on the North Platte Project some time ago. No hogs had died and those affected seemed to be improving. The other case near Wilder proved to be cholera of apparently acute form, three pigs had died, all showing cholera lesions. The herd was vaccinated at once.

On Saturday the first wool was consigned to the pool at Meridian. Fourteen farms contributed, consigning 5286 pounds. Ranch wool has sold at Boise this weel at 50 cents, which makes owners of ranch clips hopeful of receiving 55 or 60 cents. Opinion has been expressed that the pool has already been worth 5 cents per pound for all ranch wool around Meridian.

Minidoka.

The week ending May 5 was spent in a survey of the general agricultural conditions as pertaining to the live stock industries and answering requests. Mr. Farrel visited the project during the week.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

The Minidoka Project Sheep Grazing Association completed arrangements for the summer. One member who owns 400 head of sheep was hired as camp-tender at a salary of $75 a month and board, he to furnish a camp wagon and two horses. Owing to the lateness of the season, the flocks will not be combined until May 20 by which time all will have been sheared. Two men will be kept with each band until the Forest Reserve is reached. The estimated expense is 20 cents per head per month.

Fourteen members of the Sheep Grazing Association now remain. Of this number 7 have had experience in the range sheep business and five in the range cattle business while two have had no experience with stock on the range. Of the eight members of the Association who have withdrawn only two had range experience

All the farm flocks of sheep that are to go in the cooperative grazing bands were inspected during the week ending May 12. Assistance in this work was given by the Salt Lake Office of the Bureau of Animal Industry. All were found to be free from scab and disease. Ticks were prevalent, so that an effort will be made to have all dipped after shearing.

Mr. Bennett, Field Horticulturist of the University of Idaho, spent 3 days on the project and was accompanied to the farms of the most progressive potato growers. The number of demonstration plots for producing pure seed, free from disease, will be increased this year, a large number of requests for assistance of this kind having been received. The potato acreage of the project shows an increase this year, the increase coming as a result of more diversity and a more general distribution rather than an increase of the acreage on the farms where they have been grown in the past. Dipping to control disease is being practiced much more general than common.

Uncompahgre.

During the two weeks ending May 12 severe storms of rain and snow resulted in heavy losses of cattle and sheep. The sheep were sheared earlier than was best for them under the weather conditions. The losses of cattle were due to the fact that no feed was available on the farms and the stock were sent to the range before the snow had disappeared.

A trip to Wisconsin to assist in the selection of dairy stock was made. The first stop was made at Ft. Atkinson, where two days were spent in attempting to locate the class

Uncompahgre (continued).

of animals desired. There is no Holstein breeders' association in Jefferson County to assist buyers in the selection of stock. Due to this fact buyers are at the mercy of the dealers. The Guernsey breeders have an association in this County which assists the buyers greatly in locating desirable stuff. The state has been drained of dairy cattle the last two months, so that it is a difficult task to find the stock that is wanted. Buyers are there from all parts of the United States. An interesting thing regarding buyers is that nearly all are bankers or representatives of banks buying for their localities.

The Waukesha County Breeders' Association was visited and after two days' search with the secretary the desired number of stock was located and purchased. The Waukesha Breeders' Association will assist in locating every breed desired and a list is on file of those having stock for sale. The Association charges $2.50 per head for locating grades and $5 for pure breds. This was found to be a necessary expense unless the buyer had a great deal of time to spend in going from farm to farm. Mr. Beard, the secretary of the association, advises whereever known regarding the health of the herds visited.

The animals are purchased subject to the tuberculin test and in all cases the owners pay the testing expense. The Waukesha breeders donate the use of their sale barns for the testing of the animals. They also furnish a man to assist in the loading of the car.

The car for shipment was supplied with hay and water before starting. This is done by the buyer. A box car forty feet long, with end doors, was taken for this shipment. Troughs were arranged for feeding and watering. The car was well bedded before starting, with straw and shavings. A upper deck was constructed large enough to hold two tons of hay. Barrels were put in to hold water. The animals are all tied one way and there was ample room for the animals to lie down. Under this arrangement it is not necessary to unload in transit.

Twenty-one animals were purchased, mostly grade Holstein heifers. The prices range from $85 to $110 per head. Two pure bred Holstein bulls were purchased at $100 and $130 and one Guernsey bull at $115. These bulls were calves of excellent breeding. Two grade Holstein calves were bought at $40 each. Bred heifers of good quality range in price from $75 to $125 depending on size.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte.

During the week ending May 12 a circular letter entitled "Canker Sore Mouth in Pigs", was mailed out to the farmers on the project. In this letter the necessity of more sanitary quarters for hogs was emphasized, also the importance of promptly isolating the pigs that become affected with the sore mouth. As a medical treatment, iodine or potassium permanganate were recommended, iodine being preferred. Each year some canker sore mouth occurs on the project. As a rule the farmers are not prepared for the trouble, either as to its spread or control measures.

Application for loans are now being made out by members of a local Farm Loan association composed of farmers surrounding Mitchell. At the present time approximately 60 farmers joined this Association and it is probable that at least 75 applications for loans will be made through the Mitchell loan association.

Fifty two hogs were given the double treatment for cholera during the week; 19 requests for service and information were received, and 7 farm visits were made. Fair weather prevailed all week and farming operations are in full swing.

Truckee-Carson.

During the week ending May 12, some time was devoted to assisting the State Disease Control Office in the anthrax vaccination work on this project.

On Tuesday Messrs. Winkjer, and Ellington of the Dairy Division, and Mr. Regan of the University of Nevada, visited the project in the interest of bull association work. On Tuesday evening, a meeting was held at the Harmon School, with an attendance of 40 dairymen. At this meeting the subject of bull associations was thoroughly discussed, and considerable interest was shown, although practically every dairyman present had a pure bred bull at the head of his herd. A temporary organization was perfected for the purpose of further considering various phases of bull association work, and the advisability of establishing an association in the Harmon district.

On Friday, the pigs in the pig feeding test on the farm of C. P. Whitney, were weighed a second time. Results, so far, of this feeding test have been very satisfactory. There were 11 pigs put into the experiment at 100.2 pounds each. After 14 days' feeding these pigs had increased in weight to an average of 134.4 pounds. The feed consumed consisted of 935 pounds of a mixture composed of tankage, one part, and wheat middlings,

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Nort
Truckee-Carson, (continued).

six parts. In addition to this, 800 pounds of skim milk were fed. When the solids of the skim milk are added to the grain consumed, the pigs show a gain of one pound to every 2.59 pounds of feed. There is some chance that these pigs had a little more fill at the time of the last weighing than at first. However, this chance for error was closely guarded. If we allow forty pounds excess fill at the last weighing, the results show 2.3% daily gain and one pound of gain for each 2.88 pounds of feed.

The following table shows the number of cows tested in the local association and the average daily production of butter-fat each month since the association began operations:

Month.	Cows on test.	Average daily production of butterfat, pounds per cow.
November	511	0.750
December	515	0.767
January	500	0.835
February	459	0.837
March	495	0.854
April	545	0.885.

NOTICE

PROPERTY

The attention of field employees is called to the following memorandum by the Chief Clerk of the Bureau, dated April 9,1917:

"It has been noted that a number of the offices of this Bureau have been submitting lists of property, stating that the articles have become worn out and are unserviceable and requesting permission to drop them from their inventories without stating what disposition is made of the remaining parts. Attention is invited to the following extracts from Sections 9 and 11 of the Property Regulations, effective July 1, 1916:

PARAGRAPH 9.

Articles for which the Department has no further use and articles which have become unserviceable will be submitted to a board of survey for sale or other disposition. In Washington

PROPERTY (continued).

such articles will be submitted to the department baord of survey. For action concerning such articles outside of Washington special boards of survey will be appointed upon recommendation of the chief of bureau. Recommendations for the appointment of special boards of survey shall be supported by description of the articles to be disposed of, together with statements of the specific reasons therefor.

PARAGRAPH 11.

"An employee, responsible for property which has become totally unserviceable or worthless at a place where it would be impossible for a board of survey to pass upon it, must refer the facts to the chief of bureau, who, if he is satisfied with the report, may, with the prior approval of the Secretary, authorize and direct the destruction of the property and appropriate adjustment of property returns.

It will be noted that all property worn out or of no further use will be submitted to Boards of Survey for sale or other disposition and that even the chief of the bureau has no authority to authorize and direct the destruction of property without the prior approval of the Secretary.

It will be noted, however, in the first paragraph on page 62 of the Property Regulations that it is stataed that

> When economy of expenditure or efficiency of use will result and the necessary parts can be taken from articles on hand and no longer needed for the purpose designed, such articles on hand may be regarded as expendable under this paragraph.

Property used in repairs may be dropped from inventories by reference to this paragraph.

It is requested that the attention of all officers in immediate charge of property belonging to the Bureau be called to the requirements of the Property Regulations in regard to the disposition of property for which there is no further use or which is worn out."

In pursuance of this order, there will be appointed at each Western Irrigation field station a board of survey, consisting of three members of the local staff, for the purpose of disposing of worn out or unserviceable articles. In the case of the office of Demonstrations on Reclamation Projects, where there is but one representative of the office on duty, he will be constituted a board of survey, with the full powers of the usual board of three members.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

During the week ending May 19 the maximum temperature was 90, minimum 32, and precipitation 0.

Weather conditions were favorable for field work during the entire week and the seeding of all crops excepting potatoes and corn was practically completed. Irrigation was started on pastures and alfalfa on May 19. These crops have made very good growth during the past two weeks. Three cows were started on one acre of mixed grass pasture in field AII on May 14. Fall pigs on alfalfa pasture and varying grain rations were started on pasture in field AII on May 15.

Crops on the project and neighboring territory are in fairly good condition, although because of the late season the acreage contemplated earlier in the season has been reduced, as it has been impossible to do much spring breaking. A large acreage is being planted to beans both on dry and irrigated land. There appears to be a scarcity of seed oats and barley and a few car shipments of this seed from Washington and Oregon have been received here. There is also a shortage of seed corn, the supply of local seed being entirely exhausted.

The laboratory building for the water requirement work was completed. Work on the foreman's house is well under way and the construction of the herdsman's house was begun.

Irrigated Rotations - Fields K and L-IV.

The seeding of wheat, oats, flax, alfalfa and sugar beets has been completed. Irrigation ditches and drains are being cleaned in field L-IV.

On May 11 grade Poland China shotes were put on alfalfa pasture in rotation 67, field K and rotation 69, field L-IV. The average initial weight for the four pigs in K was 127 pounds, for the five in L-IV, 102 pounds.

San Antonio.

During the two weeks ending May 26 the maximum temperature was 96, minimum 52, precipitation .97 inch, and greatest daily range 34.

All cotton in the rotation experiments was planted over on May 17, the stand resulting from the first planting being considered too poor to leave. A part of the cotton in the experiments under the direction of the Office of Crop Acclimatization

San Antonio (continued).

was also replanted. Corn in the experiments under the direction of the Office of Corn Investigations was plowed out due to the poor stand and the entire experiment replanted. Corn, milo and sorghum in the rotation experiments were cultivated once each week. Practically all of the cotton was given the first cultivation. Oat selections on field C4 were harvested. Some of them will yield a fair amount of grain. All orchards were cultivated. Some weeding was done. Soil samples were taken on the cotton plats in the rotation experiments. Alfalfa in the root-rot control experiment in the nursery on field A3 was cut for the first time, after which it was irrigated. A few plants in this experiment are already dying from root rot.

Growing conditions have been favorable for all crops during the entire period. The oats which were almost entirely dead have made rapid growth and are now heading. Milo on the rotation plats is beginning to head. Corn is tasseling much shorter than usual. More rain is needed soon for the best development of the corn crop.

Belle Fourche.

During the week ending May 26 the maximum temperature was 65, minimum 32, and precipitation 2.13 inches.

Very little field work was done. Some planting was done in the garden. Some of the trees in the dry and irrigated forestry, and trees and shrubs on the grounds, were pruned. Due to continued cold weather, the seeded grains have made little growth.

Fencing of field R, pasture grasses, was about completed and the new land in the horse pasture was fenced.

Most of the men were employed throughout the week in fencing hog and sheep plats, shelling corn, hauling feed and water for stock, and cleaning up the yard.

Fifteen sheep were sheared, the clip averaging about 10.5 pounds per head, the highest being 18 and the lowest 5 pounds. The total clip was 154 pounds.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending May 12, 19 farm visits were made and 20 office calls were received.

Of the last year's seeding of mixed grass pasture which were visited this week, practically all are doing fully as well as expected. One pasture which was seeded last summer after the irrigation of grain was finished, came through the winter very well for the most part. The grass is growing very rapidly.

Some time has been given to organizing the sheep growers for selling their wool. Attempts have been made to get in touch with buyers, but, to date, none of them have been heard from.

The Cooperative Creamery is handling the ice cream business successfully so far. Every confectionery in Powell except one is handling the product.

During the week ending May 19, 13 farm visits were made, 31 office calls were received and 5 other conferences were held.

The farmers who are making tests of grass pastures this year are a little slow in seeding. The cold weather held on so late that they are still rushing to get their grain sown.

A trip was made to the range adjoining the project up the valley and also to the range in the hills north of the project. The grass is very good and the cattle are doing well. The range this year is better than usual on account of the great amount of snow during the past winter.

Two four-months-old calves died of blackleg during the week. They had never been off the farm and no clue could be found as to where they contracted it. The cattle in the herd between 6 months and 2 years of age had been vaccinated recently.

Some attention was given this week to the Boys' Pig Club and to pooling the wool.

Boise.

Six consignments of wool were received for the pool at Meridian on Saturday of the week ending May 19. A great many men have sold who had expected to consign their wool. Fifty cents has been the prevailing price and has been offered without much regard to quality, indicating the necessity of grading the wool before it is sold in order to place the premium on clean wool of high quality. On the basis of 50 cents for some

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise, (continued).

of the clips which have been sold, other which have sold for the same price should easily have brought 60 cents or more.

At a conference with some of the members of the Extension staff at Boise this week, a pool for marketing lambs for the Boise Valley for next fall was proposed. It is not known yet how many growers might be interested in this matter as the greater number of the breeders at the present time depend upon selling their surplus to range men. A canvass will be made some time during the summer to ascertain the number of lambs of this class and the amount of interest than can be expected in such a plan. One of the oldest breeders of pure bred sheep in the valley is strongly in favor of the pool for selling the ram lambs if there seems to be sufficient interest to justify it.

A little work was done in the vicinity of Bowmont this week to ascertain results of feeding whey to calves. During the time before the Salt Lake conference an effort will be made to secure considerable data in regard to this question.

Huntley.

Nineteen farm visits were made during the week ending May 19. One pure bred Holstein bull was imported to the project on Friday. This is the seventh pure bred dairy bull that has been imported to the project within the last few months. Five of these are Holsteins, one is a Jersey, and one a Guernsey.

Uncompahgre.

During the week ending May 19, 8 farms were visited and requests for service and information were received from six farms.

During the last two weeks a committee on increased crop production has been organized. For the purpose of obtaining information regarding the seed, labor, and live stock conditions, a list of questions were mailed out by the Project Manager to all the farmers of the project. These questions are being answered promptly and some very valuable data are being collected.

It is found that a great many farmers are in need of brood sows and also milk cows. There are many more wanted than can possibly be supplied locally.

While the season is very late here, as elsewhere, there is an excellent prospect for a heavy crop of alfalfa. So far there has been considerable rainfall which has helped greatly in the

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

irrigation. The spring grain crop is very promising. There have been several days of warm weather the last week which has brought out the fruit blossoms. The farmers are planting potatoes and corn at present.

Butter-fat has again reached the 50 cent mark at the cheese factory. The creamery has been paying 36 cents.

Tieton.

Thirty-four farm visits were made during the week ending May 19, 17 of which were in regard to the proposed cooperative bull association. One herd of 23 cattle were vaccinated against blackleg and two herds of 25 hogs were vaccinated against cholera.

All the boy's pig clubs in Yakima county assembled at Toppenish for their annual meeting. Messrs. Newbill and Hyslop of the State College and Mr. Bean attended the meeting and spoke upon the problems confronting the Yakima swine growers. This meeting included the winner of the first prize offered by the Duroc-Jersey Association for the best record with a pig of that breed in the United States and also the winner of the fourth prize in the same contest.

The proposed bull association continues to grow in both membership and territory. This week 10 farmers in the Cowichee district added their names to the agreement and two in the Tieton district also signified their desire for a block in their district and agreed to assist in securing other members for that purpose.

Local creameries were paying 37 cents for butter-fat until the 16th, upon which date the price raised to 38 cents. The Cowichee cheese factory continues to pay 7 cents above this price for butter-fat in whole milk for cheese making. Prime hogs are quoted at $15.50 per cwt. and the supply is small and likewise arrivals are in small lots. Feed continues practically as last reported.

Seventeen farm visits were made during the week ending May 26, 10 calls for assistance were answered and 11 office conferences were held. One day was spent in cooperation with the Reclamation Service and the office of Superintendent of Schools in arranging for a survey of available labor. This was accomlished by some one of the number of cooperators visiting each school in the county and explaining and leaving the survey cards in the hands of the upper grade scholars.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

Mr, L. W. Fluharty was this week appointed to the job of agriculturist of Yakima county. One day was spent in conference with Mr. Fluharty, Mr . DeSellem, the Horticultural Inspector, and Mr. Larsen, Tester for the Cow Testing Association. Mr. Fluharty was formerly with the Office of Farm Management.

The cooperative cheese factory at Harwood will undoubtedly be ready to begin business before July 1. The contractors expect to complete the building by June 5 and the equipment has been ordered shipped from Seattle, the order having been placed some time ago.

The price of butter-fat remains at 38 cents on the farms. The price quoted for prime hogs has risen to $15.75 per cwt. in sympathy with coast price increases. The supply continues small and local buyers who cover the Yakima Valley are doubtful that that territory will supply its own demand this season.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Scottsbluff.

During the week ending May 12 the maximum temperature was 77, minimum 26, and precipitation 0.

Six 1/4-acre plats in field 1-II were manured at the rate of 45 tons of sheep manure per acre. On three of these plats beets were seeded and on the other three plats oats were seeded. Alfalfa will be seeded on the oat stubble as soon as the oats are harvested. These six plats will be used in the maximum yield experiment.

Beets were seeded on the plats that will be used in a cultural test as a protection against winds.

Five varieties of mangels were seeded in the variety test. The seeding of small grains was completed.

The following alfalfa pasturing experiment with hogs began:

Test of pasture.- The following lots have ten shotes each and are fed about a two per cent corn ration.

Lot 1.- One-acre pasture, the pasture being cut for hay at regular time of cutting alfalfa.

Lot 2.- One-acre pasture, alternate halves of the pasture being cut every fifteen days.

Lot 3.- One-half-acre pasture divided.

Lot 4.- One-half-acre pasture not divided.

Condiment Test.-The following lots have five shotes each and are fed about a two per cent corn ration.

Lot 5.- No condiments.

Lot 6.- Access to condiments (Rotation 65).

Preference Test.- Three shotes are used in this test.

Lot 7.- A comparison of Turkestan and common alfalfa. In this pasture are two 1/16-acre plats of Turkestan and two 1/16-acre plats of common alfalfa. The pasture is divided.

During the week ending May 19 the maximum temperature was 88, minimum 39 and precipitation 0.

All corn and potato land was put in shape for planting. Corn was planted on both the dry land and irrigation rotations. The flax plats in the irrigated rotations were seeded.

The five alfalfa plats in the irrigated rotations that follow beets were seeded. Similar plats to these that were seeded a year ago were reseeded as the stand is very poor.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff (continued).

During the week ending May 29 the maximum temperature was 66, minimum 32 and precipitation 3.79 inches.

As it rained every day during the week no field work was possible. On Thursday considerable hail fell at the farm but not enough to cause much damage. South of the farm, however, considerable damage was done to the alfalfa.

Truckee-Carson.

During the week ending May 19, the maximum temperature was 84, minimum 27 and precipitation 0.

The maximum temperature, during the week ending May 26, was 66, minimum 31 and precipitation .51 inch.

Detailed work was performed as follows: Four varieties of silage corn purchased from Northrup, King and Co., were planted on the farm of J. H. Kinkhead; a portion of Oats Park in Fallon was plowed, leveled and planted to potatoes by the pupils of the grammar school under the direction of Mr. Headley; foxtail was removed from the ditches and fields; plats F7 and 10 were seeded to alfalfa and plats F5 and 9, and D3 to corn. Varieties of cabbages and tomatoes were transplanted to A3, and the varieties of sweet corn, pumpkins, squash, cucumbers, and melons were planted in fields A1 and 2.

Some experiments were begun with potatoes in Oats Park to compare results with small vs. large seed cut; large seed vs. small seed planted whole; cut seed vs. whole seed; seed spaced at about 12, 18 and 24 inches in the row; pieces placed cut face down vs. cut face up.

The followinf varieties of corn were planted--triplicate in plats H18, 19 and 20: Local Yellow Dent, Minnisota No. 23, Rustler White Dent, Murdock, Northwestern Dent, Minnesota No. 13, Wimple's Yellow Dent, N. D. White Dent, August 15, Rainbow Flint, Yellow Clarage, Reid's Yellow Dent, Yellow Learning, Yellow Hybrid, and Golden Surprise.

Belle Fourche.

During the week ending June 2 the maximum temperature was 73, minimum 30 and precipitation .35.

Cold wet weather continued the fore part of the week and very little field work was done. There was quite a heavy frost on the night of May 31 and a good many of the garden

Belle Fourche (continued).

plants were killed.

Some pruning was done in the dry and irrigated forestry, and on Saturday, corn was planted in field P, dry land, and on part of the new ground in the horse pasture.

On Tuesday, May 29, seven Holstein calves were turned on th pasture grasses in field R.

The men were employed during the week in building fence, hauling lumber and sand, and cleaning up. The foundation for the new hog house was put in.

San Antonio.

During the week ending June 2, the maximum temperature was 100, minimum 59, and greatest daily range 74. There has been no precipitation for two weeks and corn and sorghum are showing the need of moisture. Dwarf milo has headed and is now in bloom. A large part of the corn has tasseled and is in critical need of an abundant supply of moisture.

Farm work was delayed by labor shortage on account of abdence of regular men for a day or two and the inability to obtain any extra help. Practically all available labor in this section is being utilized at this time. Cotton on fields AB8, C6 and F3 was cultivated. The farm roads were disked and graded. Sorghum on plats B4-12, B4-13, and B5-6 was cut, raked, and hauled. Fifteen date palms were transplanted to orchard positions. Alfalfa in the root rot control experiment in the nursery was irrigated. All cotton on the rotation plats was weeded and weeding of corn, milo, and sorghum on the rotation plats was started. Weeds and Johnson grass on waste land was mown.

Messrs. Letteer and Mercer attended the home garden display in San Antonio one afternoon. There were 200 entries in the contest. The contest was limited to entries from home gardens. On the whole the display of vegetables was very good. The San Antonio Express donated the prizes.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending May 26, 9 farm visits were made, 27 office calls were received, and 4 other conferences were held.

Mr. Burton, State Dairyman, spent two days on the project mostly in the interest of a cow testing association and shipping in dairy cattle. Prospects do not seem very good for a cow testing association because of the small herds. It is likely that several men will be interested in shipping in cattle this fall, especially if their culls can be disposed of to good advantage.

Since so much alfalfa has winter killed this year, some of the farmers have no forage for their hogs and are sowing rape as a substitute.

Uncompahgre.

Twenty one farm visits were made during the week ending May 26.

The shipment of dairy animals from Wisconsin arrived on the project on Monday. The animals arrived in good condition and it was not necessary to unload in transit. Plenty of hay was put in to supply them on the trip. Water was easily obtained at the train stops. The time spent on the road was 6 days. In handling animals in this way it is not advisable to overload the car. In this shipment a 40 foot car was used and 21 animals were tied in the car. One heifer dropped a calf in transit and came through in good shape.

The prospects for a heavy fruit crop were never better on the project. The trees are all in blossom and the apples and pears are now being sprayed for codling moth. So far there has been no frost to damage the crop in the least. It will no doubt be necessary to thin the crop if the weather continues warm.

Reports are still coming in from the range that there have been heavy losses of cattle and sheep. This is due to the shortage of feed and the lateness of the season.

The Delta county people have decided to have a county agricultural agent this year. Delta is partly covered by the Uncompahgre project. The matter of having an agent has been under consideration for some time. Montrose county people have been considering the matter for some time but will probably not be able to appoint one this year.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

Prof. W. E. Vaplon, State Club Leader, spent one day of this week on the project discussing the club work in this section.

The local buyer of hogs for the Ogden Packing concern reports that he has handled $125,000 worth of hogs since late last fall. This is in addition to the 110 cars that have been sent to the Denver market. The competition between the Denver and Ogden people has been advantageous to the hog men. The Ogden buyer has been paying $1.25 below the Denver prices at the shipping points on the project.

Truckee-Carson.

During the week ending May 26, there were received 32 calls for assistance, and six visits were made to farms. Some time has been devoted in assisting in the anthrax vaccination work which now is about completed. Assistance was rendered in a variety of ways to the ranchers. One dairyman was assisted in securing a registered bull. Demonstrations were given in treating 3 cases of bloat. Arrangements were partly made for the cooperative shipment of one car of hogs.

The pigs on the pig feeding test on the ranch of Mr. Whitney were weighed, and for the 28 days that the pigs have been fed, very satisfactory results have been obtained. The following are the results of this test so far conducted:

Initial weight, April 27.....	Pounds,	1102.2
Weight, May 25.....	do	1799.5
Number of pigs.....		11
Number of days.....		28
Total gain.....	do	697.3
Daily gain per hog.....	do	2.26
Feed consumed:		
Shorts, 1647 lbs. @ 3¢.....		$ 49.41
Tankage, 476 lbs. @ 2½¢.....		$ 11.90
Milk, 1600 lbs. @ 25 ¢ per cwt.,.....		$ 4.00
Total grain and solids in milk.....	do	2315
Total value of feed.....		$ 65.31
Pound of grain per pound of gain....	do	3.32
Cost per pound of gain.....		9.3 ¢

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Belle Fourche.

During the week ending June 9, the maximum temperature was 92, minimum 40, and precipitation .49 inch.

The first of the week was wet and cold and no field work was done until Wednesday. The series in field O, north of the ditch, were spring-toothed, harrowed, and seeded to root crops and variety corn. Planting of corn on the new ground in the horse pasture was finished.

Some discing was done in the dry land rotations and two, two-horse teams were busy part of the week, cultivating alfalfa and brome-grass on the dry land.

Alfalfa in the grounds was mowed and raked, some spading was done in the forestry, and planting of berries in the garden was about completed.

Work on the new hog house is progressing nicely. Some time was put in by the men in work on fence, building sheep sheds, caring for stock, and cleaning up.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

Mr. R. R. Lancaster, a graduate of the Kansas Agricultural College, has been appointed county agent by the Farm Bureau and has assumed his duties. His work on the project will be mostly with the soil and crop problems. Most of the week ending May 19 was spent in answering requests and assisting the new county agent to outline his work and become familar with conditions.

Almost every farm crop on the project shows and increased acreage. Potatoes show the greatest increase, the present acreage being almost double that of a year ago. To some extent this has been at the expense of the sugar beet acreage, especially in the vicinity of Rupert and Burley. In the vicinity of Paul where a new factory is being built, the sugar beet acreage shows an increase. Where checked up, the grain acreage shows an increase. From present indications the total hay production will be no larger, if as great, as in 1916.

Wages on the farm are being forced up to $60 per month and board. In some instances even better wages are demanded.

The sheep of the Minidoka project Sheep Grazing Association were assembled into the cooperative range bands during the week ending May 26. One band is yet unsheared. Considerable difficulty was experienced in holding the flocks from the different farms in one range band. The weather was stormy with frequent showers and a hail storm which caused some straying from other outfits although the Project bands were held together with no loss.

The unsold state land on the Project was sold at public auction during the week. The prices were high as the demand was good. The buyers were mostly local men.

Mr. Chaplin of the U. S. Dairy Division visited the two project cheese factories during the week. Both were found to be producing a first class grade of cheese. Acequia is receiving 2800 pounds of milk and Paul, 1500 pounds, a day. The Acequia factory is being run at a profit, while the Paul factory is yet barely making expenses and there is still an indebtedness of $4000. A difficulty at each place is the high cost of delivering the milk, this being 30 cents per cwt. at Acequia and 50 cents per cwt. at Paul.

Calls to investigate sickness of hogs were more numerous than at any time since last September. Cases found were as follows: Scouring from a sudden change to green feed, 2; pneumonia, 2; pleurisy, 1; farrowing difficulty, 1, and blind staggers, 1.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte.

Two days of the week ending May 19 were spent with Prof. Link of the State University, potato specialist, visiting farmers over the project who are especially interested in raising potatoes. Mr. Link is advocating treating the seed potatoes either with formaldehyde or corrosive sublimate after they have been cut, as a preventive against disease, also that where their is evidence of wilt, that the stem ends of the seed potatoes be cut off. Prof. Link arranged with several farmers to conduct experiments of a varying nature. In the vicinity of Mitchell a large percentage of the potato crop has been planted. On the Dutch Flatts and in the vicinity of Minatare, however, very few potatoes have been planted. In the vicinity of Morrill and Mitchell a large acreage will be planted, while in the vicinity east only a very limited acreage will be planted to potatoes. As yet the farmers in the Third Lateral District have given but little attention to potatoes.

One bunch of small pigs was treated for sore mouth, the iodine treatment being used. Two treatments seemed to stop the trouble. One farm was visited where a number of pregnant sows within about 5 weeks of farrowing had recently been given the double treatment against cholera. The sows all had good large and strong litters, and the owner said the treatment seemed to make the pigs stronger.

Three farmers were assisted in purchasing pure bred breeding hogs during the week ending May 26. There is a considerable demand for boars at this time with which to breed sows for fall litters. This is much more noticeable than heretofore, and the indications are that there will be a good sized fall pig crop this fall. However, corn is high. It is now selling around $3 per cwt., all over the valley. Two bunches of pigs were treated for sore mouth, the iodine treatment being used. Two calls were received to deliver pigs from sows that were unable to deliver the pigs without aid. Both cases were successful.

On Wednesday, 22 grade Hampshire fall farrowed shotes were weighed up on the farm of H. H. Spencer for the starting of a feeding demonstration. In about 3 weeks another test will be started in which about 50 spring farrowed pigs will be used. A number of farmers who have been conducting feeding tests in the past have asked that we assist them in weighing their pigs again this year. An article was recently furnished the papers in the valley giving the results of feeding grain to spring farrowed pigs on alfalfa pasture as secured in our feeding tests

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

of the past two years.

On Thursday the county agricultural agent from Cheyenne, Wyoming was assisted in purchasing 5 pure bred Duroc Jersey pigs for pig club work in his county in Wyoming. The pigs cost from $10 to $25 each.

Uncompahgre.

Thirteen farm visits were made during the week ending June 2 and conferences were held with six other farmers. Calls for assistance were received from 6 men.

The first part of the week was spent in making the tests on dairy herds in the regular testing work.

The latter part of the week was spent with the district agent from the Colorado College who is stationed in the valley for the summer in the work of assisting the farmers along crop production lines. The work in connection with him was the matter of assisting in the formation of a Farm Bureau to assist him in his work for the summer. A meeting was arranged to be held in two weeks' time for the purpose of completing the organization. The plan is to perfect an organization that may be used by a county agent later on in case the County decides to hire one. The farmers talked with favor this plan.

Fifteen farm visits were made during the week and calls from 11 farmers were attended to.

The first part of the week was spent in assisting Prof. Gardner, the district agent in this section, in completing arrangements for a meeting of farmers to consider the formation of a farm bureau.

A meeting of the Montrose Grange was attended on Thursday evening. A brief talk was given on the matter of forming a sheep grazing association this summer to care for a band of sheep on the range next year. Some interest was taken in the matter and it will be taken up further after the Salt Lake Conference.

The crops generally are very good and the prospects for a fruit crop are excellent. Hay is unusually heavy for the first cutting, which is encouraging for the stockmen. The spring grain is very good. The weather at present is ideal for the growth of crops.

Twelve cows were brought in the last of the week from a point off the project and sold at auction. They were of mixed breeding and a few were of good quality. They sold in the neighborhood of $100 each.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley.

Very bad weather was experienced throughout the week ending June 2. Rain began to fall on Monday and continued until Tuesday afternoon, when the rain changed to snow, which continued to fall throughout Tuesday night and the following day. Freezing temperature which accompanied the storm did only slight damage.

Three farm visits were made and 11 milk samples were tested during the week.

Shoshone.

During the week ending June 2, 13 farm visits were made, 18 office calls were received, and 4 cows were tested in 2 herds.

An article was written for the local papers regarding a cooperative shipment of dairy cattle from Wisconsin this fall. If feed is not too high it is thought that a cooperative shipment might be arranged.

Some hog growers who have been raising one litter of hogs per year are considering breeding for fall litters.

Crops are very late as it is still cool and rainy.

Tieton.

Forty seven farms were visited during the week ending June 2, four calls for assistance were received fromfarmers and one from the Sunnyside Cooperative Creamery Company and no office conferences were held.

The greater part of the week was spent with the cooperative bull association proposition and considerable progress was made in adding to the membership of the proposed association. It is now quite probable, that the Cowichee and Tieton districts of the project will organize three breeding blocks in addition to the six or more in the Wide Hollow district of the project. In addition to this number it is probable that one block will be formed in the Moxee valley and one in the Wenas valley. One day of the past week was spent with County Agriculturist Fluharty in beginning the organization of the Moxee block.

The Sunnyside Cooperative Creamery Company is an association of several years standing. The last two or three years business has been very successful and have practically paid off the debts due to the professional organization, overvaluation of second hand equipment and improper early management. A Spokane whole-milk company have made the company a proposition of a whole-milk contract. They propose either to buy 51 per cent interest in the

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

Sunnyside Company and thereby make their milk supply secure or to install a cheese factory of their own. The cheese factory competition at the present time would, of course, be very serious to a company making butter. It may be possible to secure a contract with the Spokane people for the whole-milk trade and to add cheese-making equipment to the creamery equipment. There is a good milk supply for the whole-milk and cheese needs within a satisfactory radius of Sunnyside and a great deal of the cream now being received is from districts too distant for hauling anything except cream. It seems probable that the Spokane people desire control of a Sunnyside milk supply in order to handle more successfully, from their own viewpoint, the milk producers near Spokane who are now making effort to organize in their own interests.

Twenty six farms were visited during the week, four calls for assistance were answered and 10 office conferences were held. One herd of 23 cattle was vaccinated against blackleg. Two meetings were held for the preliminary organization of breeding blocks of the proposed bull association, discussion of constitution and by-laws and appointment of temporary directors.

The proposed bull association agreement has now been signed by 81 farmers owning 552 females of breeding age. One block was organized in the Tieton City district and a director elected, another block is practically complete in the same district but not enough members attended the meeting to complete the organization. In response to a request received at the same meeting another block is practically completed in the Cowichee district. Nine temporary directors were appointed for as many blocks in the Wide Hollow district at a meeting held at Harwood. Mr. Fluharty, county agriculturist, reports that the Moxee block is nearly complete and that there is the prospect of another block there.

The local hog market has slumped 50 cents per cwt. during the past few weeks in sympathy with similar declines in the Seattle and Portland markets. It is now quoted at $15.25 and another 25 cents decline is predicted. The butterfat market is still 38 cents.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton, (continued).

Pig Feeding Demonstration

Owner of herd.- Don Dulin, Harwood.
Nature of Demonstration.- Finishing fall shotes with rolled barley and tankage.

Date begun	May 3,
Date ended	June 6,
Length of period, days	34
Number of pigs in test	10
Average initial weight, pounds	125.5
Average final weight, pounds	184.8
Total gain, the lot, pounds	593
Average daily gain per pig, pounds	1.7
Value of gains at market price..$15.25..	$ 90.43
Grain fed:	
Rolled barley, pounds	2640
Tankage, pounds	150
Total grain fed, pounds	2790
Pounds of grain per 100 pounds gain	4.7
Average price of grain per cwt.	
Rolled barley	$ 2.87
Tankage	$ 2.00
Cost of grain per 100 pounds gain	$ 0.13
Total cost of grain	$ 79.00
Market value of gains less cost of grain	$ 11.43
Cost of grain fed at $1 per cwt.	$ 27.90
Value of gains at $7 per cwt.	$ 41.51
Value of gains at $7 less cost of grain at $1 per cwt.	$ 13.61

The above tabulation does not credit the feeding with the increase in the value per cwt. due to finishing hogs. The margin between feed cost and gain value is therefore considerably greater than these figures indicate.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Belle Fourche.

During the week ending June 16 the maximum temperature was 90, minimum 37 and precipitation 0.

Weather conditions were ideal. Some plowing and seeding was done in the dry land rotations and roads in both the irrigated and dry land rotations were plowed.

Beets and corn in Field A were hoed.

Water has been turned into the townsite lateral and the ditches on the farm were cleaned preparatory to irrigating as the alfalfa isin need of water.

Some time was put in on the Park at Newell and some of the trees in the forestry were pruned.

Part of the men were at work during the week on the hog house, making hog waterers, repairing machinery, and hauling water for stock.

San Antonio.

During the week ending June 9, the maximum temperature was 99, minimum 70, greatest daily range 28. There was no precipitation and the effect of the dry weatheris becoming more serious. Corn in particular is in serious need of moisture. It is doubtful if some of the corn would recover even if the rain came at once. However, corn on a few of the rotation plats is putting on a good number of ears and they seem to be developing fairly well. It is hoped the dry hot weather may be effective in killing out large numbers of boll weevils. The greater part of the cotton in this section is extremely late this year and unfavorable conditions for boll weevil reproduction at this time will greatly increase the chances for a cotton crop.

Sudan grass to be used in the steer pasturing experiment was fenced and the steers were removed from the oats and turned on the Sudan grass on June 7. The remainder of the oats for hay on the rotation plats were cut. The principal other field work was weeding, practically the entire farm being gone over with hoes. Oats were raked and hauled in. The yields were extremely low. Soil samples were taken on the corn plats in the rotation experiments. Some cotton in miscellaneous experiments was thinned.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

During the week ending June 2, 600 head of sheep belonging to the members of the grazing association were sold out of the shearing corrals. Their places were filled by others.

Buyers of sheep are numerous and a number are changing hands. Shorn ewes with lambs at their sides are selling at $16.50 with no summer range and from $17.50 to $18.50 where there is a reserve right transferred with the band. Twenty-two hundred head of unshorn yearlings of the cross-bred breeding of the range were sold during the week at $14 a head with no reserve right. Buyers of lambs are offering 12 cents for September and October delivery at the loading stations. Not many are being contracted, for the sheepmen refuse to sell at these prices. The sheep are doing well on the range and most of the lambs are making rapid gains, although they are very uneven.

Considerable trouble is being experienced with the grazing associations. The herder of the cattle of the cooperative grazing association has disappeared. The cattle are badly scattered from the Project to American Falls and From Snake River to the Black Pine Mountains. The location of approximately sixty head is as yet unknown. New riders were put on the range, but little can be done until the spring round-up of all the outfits which will start June 10.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

PARALYSIS IN PIGS.

During the past two years, the field men have reported a few cases of paralysis in pigs. The following is a report made on some cases on the North Platte project by Mr . C.S. Jones in the summer of 1916 and printed in the Weekly Bulletin for July 22,1916, page 44, Volume X:

"Calls were received from two farms on which some of the pigs were affected with a trouble similar to partial paralysis in older hogs. The pigs affected were about 3½ months old. On both farms they were receiving a ration of corn and alfalfa pasture and appeared to be in a very healthy condition aside from the trouble mentioned. In one herd of 40 pigs, about 15 were affected, none of them especially bad, but they would wabble around on their hind legs when walking. It seemed to affect all pigs in this herd about the same time. After a few days they appeared to grow better. In the other herd, which was about 40 miles from the first, two pigs first showed the trouble by losing control of their hind parts. Later theybecame worse and could not walk on their hind legs. About this time, others in the herd of about 90 pigs showed the same trouble, and when the visit to the farm was made about 10 pigs were affected."

During the week ending May 12, Mr. Ireland, on the Boise Project, investigated a case somewhat similar to those described by Mr. Jones. In the case on the Boise project, about one-third of the hogs in a herd of about 30 were affected. The difficulty had been present in the herd for several weeks at the time it was investigated by Mr. Ireland. The affected animals ranged from shotes to mature hogs. They seemed to have good appetites and they were in fair to good flesh. Their temperatures were either normal or slightly sub-normal.

Under date of May 23, a letter was written to the Chief of the Pathological Division of the Bureau of Animal Industry, calling his attention to the cases reported by Messrs. Ireland and Jones. Under date of May 28, the following reply was received:

"Replying to your letter of May 23, relative to a disease of pigs, manifested by symptoms of paralysis of the hind quarters, you are advised that this condition is not unfrequently met with in young growing pigs. It is due to a variety of conditions, probably the principal one of which is a ration not properly balanced, or it may be due to centres of inflammation in the spinal cord resulting from disease or from injury to the back. Injuries caused by overcrowding of hogs, indigestion and constipation, are also like factors. Animals heavily fed on corn are very prone

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Paralysis in Pigs (continued).

to the disease.

"Perhaps in certain cases, auto-intoxication plays a very important part, and degenerative changes of the spinal cord have been described as resulting from this cause.

"Growing pigs should have plenty of room to exercise, and should receive a suitable ration, in order to prevent a diseased condition of the bones. The pigs should be kept under conditions that would not predispose them to injury. As soon as a pig is noticed to be ailing, it should be placed in a separate enclosure, and given a physic of castor oil to overcome constipation and evacuate the bowels. Counter irritation along the back, produced by a stimulating turpentine or ammonia liniment, will be useful.

"In hog of mature size, the firing-iron may be used. A piece of iron may be pointed so that it is about the size of a piece of bale wire and heated to white heat. This is used while very hot to puncture holes along the lumbar region, about $1\frac{1}{2}$ inches from the median line of the back on each side and $1\frac{1}{2}$ inches apart. The line of puncture may extend from the base of the tail to in front of the kidneys, and the holes may be from one inch to $1\frac{1}{2}$ inches deep, according to the size of the hog.

"In the way of medical treatment, nerve tonic may be used. The tincture of nux-vomica may be given to hogs weighing over 150 pounds in doses of 5 to 15 minims twice daily in sloppy feed.

"Respectfully,
J. R. MOHLER,
Assistant Chief of Bureau and
Chief Pathologist."

FIELD NOTES.

Belle Fourche.

During the week ending June 23, the maximum temperature was 93, minimum 44, and precipitation .33 inch.

Alfalfa in Field A, alfalfa, trees and shrubs on the grounds, the pasture plats in Fields R and Q, hog pastures in Field K, were irrigated and the irrigation of small grains was begun.

Fields O and P have been ditched, preparatory to irrigating.

Potatoes in Field A were hoed; part of the beets in Field A were hoed, blocked and thinned, and some cultivation was done in the dry land rotations.

A little time was put in by the men in cleaning up the brush in the forestry, plowing and dragging roads, and cleaning up.

The new hog ghouse is about completed.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

An unusual amount of rain fell during the week ending May 26, and a large part of the time was spent in the office. A hog feeding test was taken at the farm of O. F. Wood of Wilder, the test being with a bunch of stock hogs on alfalfa pasture and full feed of barley, some tankage will probably be used.

One day was spent in visiting ranch sheep owners regarding the wool pool at Meridian, and Saturday was spent at Meridian receiving wool and attending a meeting of the consignors of the pool. A selling committee was elected at this meeting and given full authority to sell or hold the wool according to their own judgment.

Two calls were received during the week ending June 2, to examine hogs for cholera. Both cases appeared to be digestive troubles the pigs in one herd being found to be badly infested with worms.

A part of the week was spent with County Agent Williams on the reorganization of the Boise Valley Cow Testing Association.

One meeting was attended with County Agent Musser at which crop rotation and pastures were discussed. It has been suggested by the men of this district that a similar meeting be held once each month for the purpose of similar discussions.

A little time was spent during the week relative to the use of whey for calf feeding. Apparently, however, very little use has been made of this by-product in this way.

A silo excursion conducted by County Agent Williams was attended during the week ending June 9. About 20 automobiles were in line carrying nearly 100 per sons. At noon a picnic lunch was enjoyed after which Miss Amy Kelley, of the State Extension Department, assisted by Mr. Truax, secretary of the Ada County Farm Bureau, gave a meat canning demonstration.

One large herd of hogs were inspected for cholera during the week. One hog had died but the case could not be diagnosed, due to the condition of the carcass. As cholera has been present on this farm for the past two years the owner was advised to watch very closely for any further indications of trouble and report immediately if any should appear.

Mr. Cline, of the Truckee-Carson Project, arrived on the Boise Project on Saturday of this week for a visit before going to the conference at Salt Lake.

Considerable work has been done on the reorganization of the testing association this week.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise, (continued).

Mr. Bean, of the Tieton Project, arrived at Caldwell Monday, of the week ending June 16, enroute to Salt Lake City. With him and Mr. Cline, cheese factories were visited at Caldwell, Nampa, Meridian and Boise, on Monday and Tuesday. The remainder of the week was spent at the conference at Salt Lake.

Shoshone.

During the week ending June 9, 8 farm visits were made, 7 office calls were received, and 3 other conferences were held.

Some attention was given to arranging for the cooperative selling of wool. It seems now that practically all of the wool produced on the project will be sold cooperatively.

Two farms were visited about sick cows. One was a case of impaction and the other was a swelling about the head and neck that disappeared in one day without treatment.

During the week ending June 16, the Minidoka project was visited and the conference at Salt Lake City was attended.

On the Minidoka project with Mr. Rinehart, a number of flocks of sheep and mixed grass pastures were visited.

Huntley.

During the week ending June 9, 3 farm visits were made and 13 milk samples were tested. Very bad weather prevailed throughout the week and most of the time was spent in the office.

During the week ending June 23, 11 farm visits were made, 6 calves were vaccinated against blackleg and a trip was made to Billings. Considerable time was spent with Mr. Ellington, of the Western Dairy Office, who is assisting to erect a concrete silo at the Osborn Experiment Farm.

Minidoka.

During the week ending June 9 the route taken by the sheep from the Minidoka Project to the Saw Tooth National Forest was investigated and the trail mapped out.

Because of the large number of dry farms the sheep trails from the project to the forest are long and somewhat hard in

Minidoka (continued).

places. However, the grass is good and water holes plentiful, although a number of them are drying up rapidly.

The forest reserve is from ten to twenty days late this year, much of the range that is usually open June 15 or July 1 being still under snow.

Because of the poor condition of the beef cattle a number of matured dairy stock are being bought for the Salt Lake and Ogden markets. Buyers are visiting the farms in an endeavor to buy the cattle that are in the best shape. In a few cases almost the emtire dairy herd has been sold, while many others have let a few go. Because of the system of buying, a good grade of cattle is being shipped to market, much better than the surplus cattle that were sent to market by the farmers during the food shortage last year.

Uncompahgre.

The first part of the week ending June 16 was spent in locating dairy cows offered for sale on the Project. In this connection 3 farms were visited.

The latter part of the week was spent in attendance at the conference of field men at Salt Lake City, Utah. From Salt Lake City a trip was taken to Collinston, Utah to examine a bunch of Rambouillet bucks in which a number of Project farmers were interested.

Thirteen farms were visited during the week ending June 23, and calls were received from 6 farmers.

Mr. Farrell visited the project during the week. The first part of the week was spent on the Project, in regular work.

The latter part of the week a trip was made to the west end of Montrose County. The trip was made in the government automobile. An importation of Holstein calves was investigated in this section. During December of last year the farmers in the locality ordered 58 young calves from the Edgwater farms in Wisconsin. They were crated and sent by express to the nearest railroad point. They were about 3 weeks old and arrived during cold weather. The losses were heavy from scours and indications of pneumonia. Approximately 50 per cent of the calves died. The price paid for the calves was $25 at the nearest railroad point.

MISCELLANEOUS

Field Notes.

Western Irrigation Agriculture.

BELLE FOURCHE.

HUNTLEY.

SAN ANTONIO.

Field Notes.

Western Irrigation Agriculture.

SAN ANTONIO (continued).

SCOTTSBLUFF.

Field Notes.

Western Irrigation Agriculture.

TRUCKEE-CARSON.

UMATILLA.

YUMA.

Field Notes.

Western Irrigation Agriculture.

YUMA (continued).

Field Notes.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

BOISE.

HUNTLEY.

Field Notes.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

HUNTLEY (continued).

MINIDOKA.

Field Notes.

Demonstrations on Reclamation Projects.

NORTH PLATTE.

SHOSHONE.

Field Notes

Demonstrations on Reclamation Projects.

SHOSHONE (continued).

TIETON.

Field Notes.

Demonstrations on Reclamation Projects.

TRUCKEE-CARSON.

UNCOMPAHGRE.

Field Notes.

Demonstrations on Reclamation Projects.

UNCOMPAHGRE (continued).